CONFIDENTIAL

INPUT QUESTIONNAIRE

CATALOG. NO. Y G T 9
SIC. CODE
SIZE CODE
AREA CODE
STUDY CODE
DATES 8 6
M M D D Y Y

STUDY TITLE:
TYPE OF INTERVIEW: ☐ VENDOR ☒ USER ☒ TELEPHONE ☐ ON-SITE ☐ MAIL

INTERVIEWER: _____

COMPANY: _____ CO. TYPE: _____

ADDRESS: _____ SALES: _____

_____ NO. EMPL: _____

_____

_____

INDUSTRY ☐

☐ DISCRETE MANUFACTURING
☐ PROCESS MANUFACTURING
☐ TRANSPORTATION
☐ MEDICAL
☐ SERVICES
☐ UTILITIES
☐ RETAIL
☐ BANKING
☐ WHOLESALE
☐ OTHER
☐ INSURANCE
☐ GOVERNMENT - FEDERAL
☐ GOVERNMENT - STATE & LOCAL
☐ EDUCATION

INTERVIEWS

NAME	TITLE	TELEPHONE NO.

SUMMARY _____

_____

_____

_____

REFERENCES _____

_____

_____

FLAMINGO INTRODUCTION

VERSION 1a.

Good morning (afternoon). This is _____ calling from INPUT, an international research and planning firm. We are currently engaged in a major national study designed to examine new and advanced uses of personal computers.

By participating in this study you will have the opportunity to influence the development of future product and service offerings for PC's by a major vendor. Your identity and your responses will remain completely confidential and will be used for statistical analysis only. In return for your cooperation we will send you an executive summary of the study so that you may compare your needs and applications with those of your peers. May we begin? Thank you.

FLAMINGO CONCEPTUAL TEST - USER

(AFTER SCREENER)

1. Thank you. We would like to begin understanding a little about the type of PC you are using. First is it an IBM PC, PC/XT or PC/AT or another type?

   A. PC _____ B. PC/XT _____ C. PC/AT _____

   D. Other _____ E. DK _____ F. NA _____ G. REF_____

1a. IF OTHER: What make and model of PC are you using? _____

   _____

2. What is the memory capacity of the machine?

   A. 64K _____ B. 128K _____ C. 256k _____

   D. 512k _____ E. 640k _____ F. Other _____ (specify)

   G. DK _____ H. NA _____ I. REF _____

3. Does your PC have a hard disk?

   A. YES _____ B. NO _____ C. DK _____

   D. NA _____ E. REF _____

3a. IF YES: What is its capacity?

   A. 10M _____ B. 20M _____ C. 30M _____

   D. Other _____ (specify) E. DK _____

4. I see. Is your monitor Monochrome or Color?

A. Mono _____ B. Color _____ C. DK _____

D. NA _____ E. REF _____

5. Can you currently do graphs on your monitor?

A. YES _____ B. NO _____ C. DK _____ E. NA _____

F. REF _____

6. Is there a printer attached to your PC?

A. YES _____ B. NO _____ C. DK _____ D. NA _____

E. REF _____

6a. IF YES: What type of printer is this?

A. Dot Matrix _____ B. Daisywheel _____ C. Laser _____

D. Other _____ (specify) E. DK _____ F. NA _____

G. REF _____

7. Is there a printer available to you which you share with others?

A. YES _____ B. NO _____ C. DK _____ D. NA _____

E. REF _____

7a. IF YES: What type of printer is this?

A. Dot Matrix _____ B. Daisywheel _____ C. Laser _____

D. Other _____ (specify) E. DK _____ F. NA _____

G. REF _____

INPUT

8. Thank you. We've collected almost all the basic data which we'll need, but there are just a few more of these technical questions. Can your PC communicate with other PC's or systems or would you classify your PC as "stand-alone" without the ability to connect to other devices?

A. Communicating _ _____ B. Standalone _____ C. DK _____

D. NA _____ E. REF _____

8a. IF COMMUNICATING: Which of the following best describes your PC's communications capabilities? You may, of course, answer in more than one category.

A. Communicates by dial-up telephone to a company mainframe computer via a Value-Added Network _____

B. Communicates by dial-up telephone directly to company mainframe _____

C. Communicates by dedicated line to a company mainframe computer _____

D. Is a part of a Local Area Network which does <u>not</u> communicate outside the department _____

E. Is a part of a Local Area Network which communicates outside the department to another lan or host? _____

F. Connects to an electronic mail system run by your company _ _____

G. Connects to an electronic mail system run by a third party _____

H. Communicates by regular telephone to another company computer _____

I. Are there any other communications modes you use? (specify) _____

_____

_____

9. Thank you. That concludes our basic technical section and we would now like to move on to applications which you may be using. To begin, about how many hours do you spend in a typical workday using your PC? (INT: PROMPT IF NECESSARY)

A. Hours _____ B. DK _____ C. NA _____ D. REF _____

10. Of this time, about what percentage is spent inputting data or text at the keyboard?

A. % _____ B. DK _____ C. NA _____ D. REF _____

11. Thinking now about the applications you are using, which of the following do you use in a typical business week?

A.	Spreadsheet such as Lotus?	Uses ___	Does Not Use ___	Rank ___
B.	Wordprocessor such as Wordstar?	Uses ___	Does Not Use ___	Rank ___
C.	Database manager such as DB2?	Uses ___	Does Not Use ___	Rank ___
D.	A business graphics package?	Uses ___	Does Not Use ___	Rank ___
E.	An engineering CAD/CAM package?	Uses ___	Does Not Use ___	Rank ___
F.	Electronic mail package?	Uses ___	Does Not Use ___	Rank ___
G.	A terminal emulation package so that your PC behaves like a 3270 or other terminal?	Uses ___	Does Not Use ___	Rank ___
H.	Any other applications packages or custom program? (SPECIFY BELOW)	Uses ___	Does Not Use ___	Rank ___

11a. Package or custom application: _____

_____

12. Now thinking about the applications we have discussed, which would you say is the most important? (INT: RANK EACH IN SPACE ABOVE) The second most important? Third? Fourth? (INT: RANK ALL APPLICATIONS MENTIONED)

13. Thank you. Now I would like to describe to you several Personal Computer capabilities which may be unavailable at the present time or are only available in a limited fashion. In responding we would like you to rate how useful such a capability would be in the context of the work you do in your job. For this we will use a scale of one to five (1-5). On this scale one is defined as "not useful" while five is defined as "very useful."

First, how useful would it be to have your PC function as a telephone answering machine on our scale of one to five?

TELEPHONE ANSWERING MACHINE 1 2 3 4 5 DK _____

NA _____ REF _____

14. Have your PC function as an automatic telephone dialer?

TELEPHONE DIALER 1 2 3 4 5 DK _____ NA _____

REF_____

15. Use your PC as a voice mail mail box to send and receive messages from other PC's or with a central voice mail system?

VOICE MAIL 1 2 3 4 5 DK _____ NA _____

REF _____

16. Have your PC translate text electronic mail messages to understandable voice messages so that you could receive electronic mail from any touch tone telephone without a special terminal?

TEXT/VOICE TRANSLATION 1 2 3 4 5 DK _____ NA _____

REF _____

17. Have your PC act like a FAX (facsimile) machine and be able to send and receive documents from or to FAX machines?

FAX CAPABILITY 1 2 3 4 5 DK _____ NA _____ REF _____

18. Use a FAX machine as an input device for a word processor on your PC instead of a keyboard?

FAX INPUT 1 2 3 4 5 DK _____ NA _____

REF _____

18a. Use a FAX machine as an input device for graphical material to your PC?

FAX GRAPHIC 1 2 3 4 5 DK _____ NA _____

REF _____

19. Use a FAX machine as a printer for text and graphics for your PC?

FAX PRINTER 1 2 3 4 5 DK _____ NA _____ REF _____

20. Thank you. Now let's deal with a few more conventional functions for a moment. How useful — on the same one to five scale — would it be to access data bases from your PC on a company host computer?

DB ACCESS 1 2 3 4 5 DK _____ NA _____

REF _____

20a. Access data bases using ordinary English so you would not have to learn special terms and techniques?

1 2 3 4 5 DK _____ NA _____ REF _____

21. Access host-based applications?

HOST APPLICATIONS 1 2 3 4 5 DK _____ NA _____

REF _____

21a. Access host applications using ordinary English so you would not have to learn terms and techniques?

1 2 3 4 5 DK _____ NA _____ REF _____

22. Control host-based jobs from your PC?

HOST CONTROL 1 2 3 4 5 DK _____ NA _____ REF _____

23. Use your PC for electronic mail within your company?

IN-COMPANY E-MAIL 1 2 3 4 5 DK _____ NA _____

REF _____

24. Use your PC for electronic mail outside your company?

OUT-COMPANY E-MAIL 1 2 3 4 5 DK _____ NA _____

REF _____

25. I see. Now moving along to the area of text processing, we would like to have you evaluate the usefulness of some text functions. Once again, certain of these functions are quite advanced. While they may not be in common use, all are within the reach of today's known technology.

First, how useful would it be to place pages of typewritten text into a PC using a special scanner that eliminates keying in the text?

TEXT SCAN 1 2 3 4 5 DK _____ NA _____

REF _____

26. Once the text is scanned into the PC, edit the text with an ordinary personal computer word processing package?

TEXT EDIT 1 2 3 4 5 DK _____ NA _____

REF _____

27. Store the scanned and edited text in your PC?

STORE TEXT 1 2 3 4 5 DK _____ NA _____

REF _____

28. Store text on a mainframe computer in a library where it would be accessible by such criteria as date, title, author or subject with access under your control.

MAINFRAME STORAGE 1 2 3 4 5 DK _____ NA _____

REF _____

29. Store text files on a multi-user Office Automation system with appropriate security and access similar to the mainframe case?

O/A SYSTEM STORE 1 2 3 4 5 DK _____ NA _____

REF _____

30. Send and receive text documents from or to another PC in standard IBM DCA (Document Content Architecture) format so that these documents can be revised?

SEND/RECEIVE REVISABLE 1 2 3 4 5 DK _____

NA _____ REF _____

31. Send and receive documents from or to another PC in a form that cannot be easily revised?

SEND/RECEIVE NON-REVISE 1 2 3 4 5 DK _____ NA _____

REF _____

32. Send and receive documents in revisable form from standard office word processing systems such as Wang, DEC, Xerox and IBM?

O/A SEND-RECEIVE 1 2 3 4 5 DK _____ NA _____

REF _____

33. Send the output of a mainframe computer (such as a financial report) to a standard office automation system?

MF OUTPUT TO O/A 1 2 3 4 5 DK _____ NA _____

REF _____

34. Send and receive documents between office automation systems from different vendors such as a DEC document to a Wang System?

INTER-VENDOR TRANSM. 1 2 3 4 5 DK _____ NA _____

REF _____

35. Search the texts of stored documents for a particular word or phrase?

TEXT SEARCH 1 2 3 4 5 DK _____ NA _____ REF _____

35a. How useful would it be to have these "document translation" capabilities provided by an outside service company if your company did not offer them internally?

1 2 3 4 5 DK _____ NA _____ REF _____

35b. Why is that? _____

_____

_____

_____

36. Moving now to a related area we would like to focus on the processing of images-pictures, graphs, forms, signatures, logotypes and similar non-textual items.

First, how useful would it be to be able to store in a personal computer a document with a signature?

SIGNATURE 1 2 3 4 5 DK _____ NA _____

REF _____

37. And how useful — on a one to five scale — would it be store a document on a letterhead?

LETTERHEAD 1 2 3 4 5 DK _____ NA _____

REF _____

38. How about a document with a letterhead and signature?

LETTERHEAD/SIGNATURE 1 2 3 4 5 DK _____ NA _____

REF _____

39. Using a scanning device, store in a PC a drawing or sketch?

DRAWING 1 2 3 4 5 DK _____ NA _____ DK _____

40. Modify or add to that drawing or sketch using an ordinary PC graphics package?

MODIFY DRAWING 1 2 3 4 5 DK _____ NA _____ REF _____

41. Alter the size or position of a drawing on a page?

ALTER DRAWING 1 2 3 4 5 DK _____ NA _____

REF _____

42. Position text or captions on a drawing?

TEXT ON DRAWING 1 2 3 4 5 DK _____ NA _____

REF _____

43. Send drawings or sketches to or from other personal computers?

1 2 3 4 5 DK _____ NA _____ REF _____

44. Store and retrieve drawings or sketches on a mainframe computer in a library with appropriate security?

STORE ON MF 1 2 3 4 5 DK _____ NA _____ REF _____

45. Store and retrieve page from books or magazines on a PC?

BOOK PAGES 1 2 3 4 5 DK _____ NA _____

REF _____

46. Store documents in scientific notation or foreign languages with non-english characters in their alphabets on a PC?

FOREIGN LANGUAGE 1 2 3 4 5 DK _____ NA _____

REF _____

46a. How useful would it be to have these image services provided by an outside service company if your company did not offer them internally?

1 2 3 4 5 DK _____ NA _____ REF _____

46b. Why is that? _____

_____

_____

_____

47. We are now in our last area of product utility, that of combined text and image capability. How useful would you find it to combine various pieces of text and images on document pages in a PC?

COMBINED TEXT/IMAGE 1 2 3 4 5 DK _____ NA _____

REF _____

48. Using a scanning device, put documents with forms, images and text into a PC?

SCAN FORMS 1 2 3 4 5 DK _____ NA _____

REF _____

49. Be able to send or receive from other PC's documents combining images and text in editable form?

SEND/RCV. EDITABLE DOCUMENTS 1 2 3 4 5 DK _____

NA _____ REF _____

50. Be able to store combined image/text documents as a part of a library on a LAN file server to use yourself or to share with proper security?

LAN STORAGE 1 2 3 4 5 DK _____ NA _____ REF _____

51. Have the ability to store image and text as a part of a library on a central computer for your own use and to share with others with proper security?

MF STORAGE 1 2 3 4 5 DK _____ NA _____ REF _____

51a. How useful would it be to have these combined text and image services provided by an outside service company if your company did not offer them?

1 2 3 4 5 DK _____ NA _____ REF _____

51b. Why is that? _____

_____

_____

_____

52. In a slightly different vein, how useful would it be to be able to attach spoken (voice) explanations to images and text?

VOICE/IMAGES-TEXT 1 2 3 4 5 DK _____ NA _____

REF _____

53. In terms of overall evaluation, how <u>important</u> would it be to have for regular use in your job the telephone-related capabilities we discussed earlier such as voice mail and answering machine capabilities? Please rate the importance of this class of capabilities on a scale of one to five with one being unimportant and five being very important.

PHONE CAPABILITY 1 2 3 4 5 DK _____ NA _____

REF _____

53a. How important will this be in the future, say in three years?

1 2 3 4 5 DK _____ NA _____ REF _____

53b. Why is that? _____

_____

_____

54. Think now about the image capabilities — PC storage of images with a scanner, the ability to modify images and related capabilities — how important would these be in your job?

IMAGE CAPABILITY 1 2 3 4 5 DK _____ NA _____

REF _____

54a How important will this be in the future, say in three years?

1 2 3 4 5 DK _____ NA _____ REF _____

54b. Why is that? _____

_____

_____

55. With respect to scanning text into a PC without using the keyboard, how important overall would this be in your job?

SCAN TEXT 1 2 3 4 5 DK _____ NA _____

REF _____

55a. How important will this be in the future, say in three years?

1 2 3 4 5 DK _____ NA _____ REF _____

55b. Why is that? _____

_____

_____

56. Again on an overall basis, how important are the combined text/image capabilities we have been discussing in your job?

IMAGE/TEXT 1 2 3 4 5 DK _____ NA _____

REF _____

56a. How important will this be in the future, say in three years?

1 2 3 4 5 DK _____ NA _____ REF _____

56b. Why is that? _____

_____

_____

57. Thinking now about the cost for the complete range of voice, image, and text we have been discussing, how interested would you be in purchasing these additional capabilities for your PC if they cost $6,000? We are again using a one to five scale with one being "not very interested" and five being "very interested."

6K INTEREST 1 2 3 4 5 DK _____ NA _____

REF _____

58. How interested would you be at $4,000 in purchasing these capabilities?

4K INTEREST 1 2 3 4 5 DK _____ NA _____

REF _____

59. What would your interest be at $2,000?

2K INTEREST 1 2 3 4 5 DK _____ NA _____

REF _____

60. Now as the final portion of the interview we would like to collect a few facts that will allow us to classify your responses by departmental function within your company. What is the name of your department?

DEPT. NAME _____

(INT: 60a IS OPTIONAL. ASK ONLY IF NOT OBVIOUS FROM NAME)

60a. In a few words, how would you describe the main work of your department _____

_____

_____

61. About how many people work in your department?

_____ DK _____ NA _____ REF _____

62. Of these, what proportion have personal computers?

% _____ DK _____ NA _____ REF _____

63. With respect to this location, what is the principal business conducted here? _____

_____

_____

_____

_____

Thank you. That completes the interview. We greatly appreciate your cooperation and hope you have enjoyed the opportunity to respond to some advanced PC applications. At the conclusion of the study we will be sending you a brief summary of the results so that you can compare your responses with those of other PC users.

INPUT®

Parsippany Place Corporate Center, Suite 201, 959 Route 46 East, Parsippany, NJ 07054 (201) 299-6999

March 25, 1986

Mrs. Patricia H. Price
Manager-New Business Ventures
GTE Data Services
First Florida Tower
P.O. Box 1548
Tampa, Florida 33601

Dear Mrs. Price:

Based on last week's meeting with you, Paul Heller and your venture associates we at INPUT have prepared this proposal to assist in the assessment of the opportunity. Since those meetings we have also received and reviewed the study materials provided by your associates and have formulated a plan which we believe will:

1. Provide confirmation/disconfirmation of the need for a joint relationship.

2. Calibrate the market need for products and services which you might offer jointly and that GTEDS might offer individually.

3. Form a baseline market calibration which can be expanded, segmented and refined if the opportunity should prove favorable.

Of the four major tasks identified in the meeting of March 19, 1986 in Tampa this proposal relates principally to item II, Market Analysis but by necessity also relates to item I, Product and Services Definition. The essence of the task may be described as a test with "users" of the attractiveness and utility of the proposed products and services.

INPUT'S UNDERSTANDING

We understand that GTEDS believes there is significant commercial potential in a combination of:

1. A new input device for graphics and text
2. Software for the conversion of incompatible data systems to compatible formats.
3. Mainframe storage of converted and unconverted data.
4. Communications between devices requiring the above capabilities.

We further understand that there are material questions as to the mode in which such services/products may be delivered. These would include the possibility of a pure service offering in which the capabilities would be resident on GTE systems and sold to other parties on a usage basis. Another possibility would be that the capability would be sold as a "package" for installation on the buyer's system or systems. A third possibility would be some combination of sale and service, perhaps related to usage and the geographic distribution of that usage.

INPUT notes that the combination of hardware, software and communication envisioned by GTEDS provides a number of unique advantages in combination that are not available from the individual elements. Among these are:

1. A modified "E-mail" service in which it is possible to store, manipulate and transmit both text and graphics.

2. A movement from "screen-oriented" to "paper-oriented" instantaneous document transmission.

3. An implied manipulability of graphics as flexible as current text manipulation.

4. Digitzed voice commentary.

5. A removal of previous device compatibility barriers, at least with respect to transmission of text.

6. An offering consonant with IBM system architecture and communications defacto standards.

While by no means exhaustive, the above list does set forth certain capabilities which may prove advantageous. In essence the proposed offering combines elements of facsimile, in-house publishing, electronic mail, personal computing and mainframe computing. It is further known to be in line with certain general trends which include:

1. A desire for interconnection between large and small systems.

2. Increasing use of electronic document transmission.

3. Growing interest in graphics system and capabilities.

4. Greater need to allow communications between previously incompatible systems.

In the context of this understanding INPUT sets forth its proposal for calibrating the opportunity.

STUDY METHOD

It is axiomatic in testing the concepts involved in a product or service offering that the views of actual or potential users and decision makers must be taken into full account. In this instance it is believed that the most likely market in which there is a need for the proposed service is large corporations. This is deemed likely for the following reasons:

1. Extremely high concentration of IBM mainframe equipment, a necessary pre-condition for the offering.

2. Extremely high incidence of personal computers, another pre-condition.

3. Geographic dispersion of facilities, a desirable characteristic.

4. Diverse types of "ad hoc" DP equipment installations, a necessary pre-condition for the software component.

5. The vast majority of information services and DP expenditures occur among these firms. This implies that on a "per contact" basis revenue potential is maximized.

While a preliminary definition of the desirable universe of firms is derivable with ease, a more difficult task is the determination of interviewee. A complex system of the type envisioned could be installed at a central site and "imposed" upon users. Alternatively, users could "demand" certain capabilities of the system if known to them. In reality, successful adoptions of complex technology require the intersection of user needs and central responses. Accordingly, we propose to interview both central management and dispersed users for this study. In the interests of minimum execution time and reasonable expense we propose that such interviews be conducted by telephone and in a standard format to be agreed upon by GTEDS and INPUT.

Contents of the interview should focus on the need, importance of that need and likely timing of implementation of each component of the proposed offering. This is most efficiently accomplished by scalar rating techniques. For example, "How important (on a scale of 1 to 5) is it that you be able to store graphics and text documents on your personal computer?" or "How important is it that you be able to store graphics and text documents on a central system?" A thoroughly developed protocol will allow the development of a needs inventory against which the proposed product/service may be matched.

When the needs inventory is combined with site related data such as equipment installed and services used and with respondent data such as job function, a relatively clear picture of the viability of the product/service will emerge, one sufficient to allow determination of both the "goodness" of the project and its likely scale and scope.

For the preliminary market analysis phase, INPUT recommends that a total of 120 interviews be conducted. These will be allocated as 80 user interviews i.e., PC users in large company departments and 40 central management interviews, these latter comprised of MIS or O/A management. The appropriateness of the interviews will be guarded by a carefully developed screening protocol and GTEDS will have access to the titles of respondents on an individual basis.

Through the use of appropriate analytical techniques, GTEDS will understand at the conclusion of the engagement the:

1. Product/Service characteristics most in demand.

2. Functions/tasks most in need of those capabilities.

3. Likely rate of growth for demand.

4. Most suitable delivery mode for service.

5. Commercial viability and scale (which imply an appropirate level of investment, if any).

INPUT wishes to emphasize the imperative need to develop a full inventory of service features and capabilities. While this is currently well understood for the "input device" it is much less well understood by us in the software

and communications aspects of the service. Effective execution of this study has as a given a full service inventory. In our view, this topic needs immediate attention.

ROLE OF EXISTING RESEARCH

Research provided by the potential venture partner shows positive signs of demand for the input device. While this is certainly encouraging, this work was necessarily silent on the device in the context of GTEDS' more complete service offering. Accordingly, there will be some need to re-test the input device as a part of a larger system and determine its relationship to that system. Accordingly, we believe that the existing research, while encouraging, does not reflect directly on GTEDS' business case or the potential of the expanded offering.

WORKING RELATIONSHIP & DELIVERABLES

During the course of this engagement INPUT will:

1. Assist GTEDS in the development of the service inventory.

2. Assist (as requested) in developing cost data.

3. Generate two related questionnaires for MIS management and users for GTEDS approval.

4. Administer said questionnaires by telephone interview to 40 MIS/OA managers in large firms by random selection and to 80 PC users.

5. Analyze the data gathered to the above points with an emphasis on comparisons between the two groups.

6. Present the results of the analysis to GTEDS management with recommendations for action and rationale for those recommendations.

7. Work closely with members of the project team during the engagement and keep GTEDS fully apprised of study direction and interim findings.

SCHEDULE & FEES

INPUT believes that the survey portion of this engagement to include questionnaire development, sample selection, interviews and analysis can be accomplished within six weeks from the availability of the service inventory mentioned above. During the engagement GTEDS will be apprised of interim findings to assist in decision making processes and the relationship with the potential partner.

The fee for the engagement will be $38,750 payable in two installments of $19,375, the first at the onset of the engagement and the second at completion. Expenses for travel, expedited delivery services, extra copies and kindred items (if any) are billed at the completion of the engagement and at cost. Expenses in excess of 5% of the project fee will not be incurred without the permission of the GTEDS project supervisor. Fees shall be due and payable within 30 days of invoice date.

PROJECT START DATE: March 31, 1986.

CONCLUSION

We look forward to working with GTEDS on this demanding market analysis assignment and related tasks. For your convenience an authorization block as been provided. Simply sign appropriately and return this document to the letterhead address. Should there be any questions, please contact the undersigned.

Sincerely,

D. W. Fostle
Vice President

Accepted by GTE Data Services:		Accepted by INPUT:	
Name:	DAVID K. DENMARK	Name:	D. W. FOSTLE
Title:	PROCUREMENT DIRECTOR	Title:	VICE PRESIDENT
Date:	APR 02 1986	Date:	4/3/86
Signature:		Signature:	

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FLAMINGO INTRODUCTION

VERSION 1

Good morning (afternoon). This is _____ calling from INPUT, an international research and planning firm. We are currently engaged in a major national study designed to examine new and advanced uses of personal computers.

By participating in this study you will have the opportunity to influence the development of future product and service offerings for PC's by a major vendor. Your identity and your responses will remain completely confidential and will be used for statistical analysis only. In return for your cooperation we will send you an executive summary of the study so that you may compare your needs and applications with those of your peers. May we begin? Thank you.

FLAMINGO CONCEPTUAL TEST - USER

(AFTER SCREENER)

1. Thank you. We would like to begin understanding a little about the type of PC you are using. First is it an IBM PC, PC/XT or PC/AT or another type?

   A. PC _____ B. PC/XT _____ C. PC/AT _____

   D. Other _____ E. DK _____ F. NA _____ G. REF_____

1a. IF OTHER: What make and model of PC are you using? _____

   _____

2. What is the memory capacity of the machine?

   A. 64K _____ B. 128K _____ C. 256k _____ D. 512k _____

   E. 640k _____ F. Other _____ (specify) G. DK _____

   H. NA _____ I. REF _____

3. Does your PC have a hard disk?

   A. YES _____ B. NO _____ C. DK _____

   D. NA _____ E. REF _____

3a. IF YES: What is its capacity?

   A. 10M _____ B. 20M _____ C. 30M _____

   D. Other _____ (specify)

4. I see. Is your monitor Monochrome or Color?

A. Mono _____ B. Color _____ C. DK _____

D. NA _____ E. REF _____

5. Can you currently do graphs on your machine?

A. YES _____ B. NO _____ C. DK _____ E. NA _____

F. REF _____

6. Is there a printer attached to your PC?

A. YES _____ B. NO _____ C. DK _____ D. NA _____

E. REF _____

6a. IF YES: What type of printer is this?

A. Dot Matrix _____ B. Daisywheel _____ C. Laser _____

D. Other _____ (specify) E. DK _____ F. NA _____

G. REF _____

7. Is there a printer available to you which you share with others?

A. YES _____ B. NO _____ C. DK _____ D. NA _____

E. REF _____

7a. IF YES: What type of printer is this?

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8. Thank you. We've collected almost all the basic data which we'll need, but there are just a few more of these technical questions. Can your PC communicate with other PC's or systems or would you classify your PC as "stand-alone" without the ability to connect to other devices?

A. Communicating _____ B. Standalone _____ C. DK _____

D. NA _____ E. REF _____

8a. IF COMMUNICATING: Which of the following best describes your PC's communications capabilities? You may, of course, answer in more than one category.

A. Communicates by dial-up telephone to a company mainframe computer via a Value-Added Network _____

B. Communicates by dedicated line to a company mainframe computer _____

C. Is a part of a Local Area Network which does <u>not</u> communicate outside the department _____

D. Is a part of a Local Area Network which communicates outside the department _____

E. Connects to an electronic mail system run by your company _____

F. Connects to an electronic mail system run by a third party _____

G. Communicates by regular telephone to another company computer _____

H. Are there any other communications modes you use? (specify) _____

_____

9. Thank you. That concludes our basic technical section and we would now like to move on to applications which you may be using. To begin, about how many hours do you spend in a typical workday using your PC? (INT: PROMPT IF NECESSARY)

A. Hours _____ B. DK _____ C. NA _____ D. REF _____

10. Of this time, about what percentage is spent inputting data or text at the keyboard?

A. % _____ B. DK _____ C. NA _____ D. REF _____

11. Thinking now about the applications you are using, which of the following do you use in a typical business week?

A.	Spreadsheet such as Lotus?	Uses ___	Does Not Use ___	Rank ___
B.	Wordprocessor such as Wordstar?	Uses ___	Does Not Use ___	Rank ___
C.	Database manager such as DB2?	Uses ___	Does Not Use ___	Rank ___
D.	A business graphics package?	Uses ___	Does Not Use ___	Rank ___
E.	An engineering CAD/CAM package?	Uses ___	Does Not Use ___	Rank ___
F.	Electronic mail package?	Uses ___	Does Not Use ___	Rank ___
G.	A terminal emulation package so that your PC behaves like a 3270 or other terminal?	Uses ___	Does Not Use ___	Rank ___
H.	Any other applications packages or custom program? (SPECIFY BELOW)	Uses ___	Does Not Use ___	Rank ___

10a. Package or custom application: _____

_____

11. Now thinking about the applications we have discussed, which would you say is the most important? (INT: RANK EACH IN SPACE ABOVE) The second most important? Third? Fourth? (INT: RANK ALL APPLICATIONS MENTIONED)

12. Thank you. Now I would like to describe to you several Personal Computer cabilities which are may be unavailable at the present time or are only available in a limited fashion. In responding we would like you to rate how useful such a capability would be in the context of the work you do in your job. For this we will use a scale of one to five (1-5). On this scale one is defined as "not useful" while five is defined as "very useful." First, how useful would it be to have your PC function as a telephone answering machine on our scale of one to five?

TELEPHONE ANSWERING MACHINE 1 2 3 4 5 DK _____

NA _____ REF _____

13. Have your PC function as an automatic telephone dialer?

TELEPHONE DIALER 1 2 3 4 5 DK _____ NA _____

REF_____

14. Use your PC as a voice mail mail box to send and receive messages from other PC's or with a central voice mail system?

VOICE MAIL 1 2 3 4 5 DK _____ NA _____

REF _____

15. Have your PC translate text electronic mail messages to understandable voice messages so that you could receive electronic mail from any telephone without a special terminal?

TEXT/VOICE TRANSLATION 1 2 3 4 5 DK _____ NA _____

REF _____

16. Have your PC act like a FAX (facsimile) machine and be able to send and receive documents from or to FAX machines?

FAX CAPABILITY 1 2 3 4 5 DK _____ NA _____ REF _____

17. Use a FAX machine as an input device for a word processor on your PC?

FAX INPUT 1 2 3 4 5 DK _____ NA _____

REF _____

18. Use a FAX machine as a printer for your PC?

FAX PRINTER 1 2 3 4 5 DK _____ NA _____ REF _____

19. Thank you. Now let's deal with a few more conventional functions for a moment. How useful — on the same one to five scale — would it be to access data bases from your PC on a company host computer?

DB ACCESS 1 2 3 4 5 DK _____ NA _____

REF _____

20. Access host-based applications?

HOST APPLICATIONS 1 2 3 4 5 DK _____ NA _____

REF _____

21. Control host-based jobs from your PC?

HOST CONTROL 1 2 3 4 5 DK _____ NA _____ REF _____

22. Use your PC for electronic mail within your company?

IN-COMPANY E-MAIL 1 2 3 4 5 DK _____ NA _____

REF _____

23. Use your PC for electronic mail outside your company?

OUT-COMPANY E-MAIL 1 2 3 4 5 DK _____ NA _____

REF _____

24. I see. Now moving along to the area of text processing, we would like to have you evaluate the usefulness of some text functions. Once again, certain of these functions are quite advanced. While they may not be in common use, all are within the reach of today's known technology.

First, how useful would it be to place pages of typewritten text into a PC using a sepcial scanner that eliminates keying in the text?

TEXT SCAN 1 2 3 4 5 DK _____ NA _____

REF _____

25. Once the text is scanned into the PC, edit the text with an ordinary personal computer word processing package?

TEXT EDIT 1 2 3 4 5 DK _____ NA _____

REF _____

26. Store the scanned and edited text in your PC?

STORE TEXT 1 2 3 4 5 DK _____ NA _____

REF _____

27. Store text on a mainframe computer in a library where it would be accessible by such criteria as date, title, author or subject with access under your control.

MAINFRAME STORAGE 1 2 3 4 5 DK _____ NA _____

REF _____

28. Store text files on a multi-user Office Automation system with appropriate security and access similar to the mainframe case?

O/A SYSTEM STORE 1 2 3 4 5 DK _____ NA _____

REF _____

29. Send and receive text documents from or to another PC in standard IBM DCA (Document Content Architecture) format so that these documents can be revised.

SEND/RECEIVE REVISABLE 1 2 3 4 5 DK _____

NA _____ REF _____

30. Send receive documents from or to another PC in a form that cannot be easily revised.

SEND/RECEIVE NON-REVISE 1 2 3 4 5 DK _____ NA _____

REF _____

31. Send and receive documents in revisable form from standard office word processing systems such as Wang, DEC, Xerox and IBM?

O/A SEND-RECEIVE 1 2 3 4 5 DK _____ NA _____

REF _____

32. Send the output of a mainframe computer (such as a financial report) to a standard office automation system?

MF OUTPUT TO O/A 1 2 3 4 5 DK _____ NA _____

REF _____

33. Send and receive documents between office automation systems from different vendors such as a DEC document to a Wang System?

INTER-VENDOR TRANSM. 1 2 3 4 5 DK _____ NA _____

REF _____

34. Search the texts of stored documents for a particular word or phrase?

TEXT SEARCH 1 2 3 4 5 DK _____ NA _____ REF _____

35. Moving now to a related area we would like to focus on the processing of images-pictures, graphs, forms, signatures, logotypes and similar non-textual items.

First, how useful would it be to be able to store in a personal computer a document with a signature?

SIGNATURE 1 2 3 4 5 DK _____ NA _____

REF _____

36. And how useful — on a one to five scale — would it be store a document on a letterhead?

37. How about a document with a letterhead and signature?

LETTERHEAD/SIGNATURE 1 2 3 4 5 DK _____ NA _____

REF _____

38. Using a scanning device, store in a PC a drawing or sketch?

DRAWING 1 2 3 4 5 DK _____ NA _____ DK _____

39. Modify or add to that drawing or sketch using an ordinary PC graphics package?

MODIFY DRAWING 1 2 3 4 5 DK _____ NA _____ REF _____

40. Alter the size or position of a drawing on a page?

ALTER DRAWING 1 2 3 4 5 DK _____ NA _____

REF _____

41. Position text or captions on a drawing?

TEXT ON DRAWING 1 2 3 4 5 DK _____ NA _____

REF _____

42. Send drawings or sketches to or from other personal computers?

1 2 3 4 5 DK _____ NA _____ REF _____

33. Store drawings or sketches on a mainframe computer in a library with appropriate security?

STORE ON MF 1 2 3 4 5 DK _____ NA _____ REF _____

34. Store page from books or magazines on a PC?

BOOK PAGES 1 2 3 4 5 DK _____ NA _____

REF _____

35. Store documents in foreign languages with non-english characters in their alphabets on a PC?

FOREIGN LANGUAGE 1 2 3 4 5 DK _____ NA _____

REF _____

36. We are now in our last area of product utility, that of combined text and image capability. How useful would you find it to combine various pieces of text and images on document pages in a PC?

COMBINED TEXT/IMAGE 1 2 3 4 5 DK _____ NA _____

REF _____

37. Using a scanning device, put documents with forms, images and text into a PC?

SCAN FORMS 1 2 3 4 5 DK _____ NA _____

REF _____

38. Be able to send or receive from other PC's documents combining images and text in editable form?

SEND/RCV. EDITABLE DOCUMENTS 1 2 3 4 5 DK _____

NA _____ REF _____

39. Be able to store combined image/text documents as a part of a library on a LAN file server to use yourself or to share with proper security?

LAN STORAGE 1 2 3 4 5 DK _____ NA _____ REF _____

40. Have the ability to store image and text as a part of a library on a central computer for your own use and to share with others with proper security?

MF STORAGE 1 2 3 4 5 DK _____ NA _____ REF _____

41. In a slightly different vein, how useful would it be to be able to attach spoken (voice) explanations to images and text?

VOICE/IMAGES-TEXT 1 2 3 4 5 DK _____ NA _____

REF _____

42. In terms of overall evaluation, how <u>important</u> would it be to have for regular use in your job the telephone-related capabilities we discussed earlier such as voice mail and answering machine capabilities? Please rate the importance of this class of capabilities on a scale of one to five with one being unimportant and five being very important.

PHONE CAPABILITY 1 2 3 4 5 DK _____ NA _____

REF _____

42a. How important will this be in the future, say in three years.

1 2 3 4 5 DK _____ NA _____ REF _____

42b. Why is that? _____

43. Think now about the image capabilities — PC storage of images with a scanner, the ability to modify images and related capabilities — how important would these be in your job?

IMAGE CAPABILITY 1 2 3 4 5 DK _____ NA _____

REF _____

43a How important will this be in the future, say in three years?

1 2 3 4 5 DK _____ NA _____ REF _____

43b. Why is that? _____

44. With respect to scanning text into a PC without using the keyboard, how important overall would this be in your job?

SCAN TEXT 1 2 3 4 5 DK _____ NA _____

REF _____

44a. How important will this be in the future, say in three years?

1 2 3 4 5 DK _____ NA _____ REF _____

44b. Why is that? _____

45. Again on an overall basis, how important are the combined text/image capabilities we have been discussing in your job?

IMAGE/TEXT 1 2 3 4 5 DK _____ NA _____

REF _____

45a. How important this will be in future, say in three years?

1 2 3 4 5 DK _____ NA _____ REF _____

45b. Why is that? _____

46. Thinking now about the cost for the complete range of voice, image, and text we have been discussing, how interested would you be in purchasing these capabilities for your PC if they cost $6,000? We are again using a one to five scale with one being "not very interested" and five being very interested.

6K INTEREST 1 2 3 4 5 DK _____ NA _____

REF _____

47. How interested would you be at $4,000 in purchasing these capabilities?

4K INTEREST 1 2 3 4 5 DK _____ NA _____

REF _____

48. What would your interest be at $2,000?

2K INTEREST 1 2 3 4 5 DK _____ NA _____

REF _____

49. Now as the final portion of the interview we would like to collect a few facts that will allow us to classify your responses by departmental function within your company. What is the name of your department?

DEPT. NAME _____

(INT: 49a IS OPTIONAL. ASK ONLY IF NOT OBVIOUS FROM NAME)

49a. In a few words, how would you describe the main work of your department _____

_____

_____

50. About how many people work in your department?

_____ DK _____ NA _____ REF _____

51. Of these, what proportion have personal computers?

% _____ DK _____ NA _____ REF _____

52. With respect to this location, what is the principal business conducted here? _____

_____

_____

_____

_____

Thank you. That completes the interview. We greatly appreciate your cooperation and hope you have enjoyed the opportunity to respond to some advanced PC applications. At the conclusion of the study we will be sending you a brief summary of the results so that you can compare your responses with those of other PC users.

SPECIAL DATA FOR GTEDS

In a prior study completed in late 1985 INPUT gathered the following data at very large firms in manufacturing, finance and services. Respondents were from Management Information Systems and Communications Management qualified to respond on use of personal computers in their firms. This data, while not definitive for GTEDS, may illuminate certain aspects of Flamingo. Care should be used in drawing specific inferences from the data or in extrapolating it to product or service specification.

SYSTEM SOFTWARE USE

SYSTEM	% NOW	% FUTURE
MVS	88%	84%
VM	57%	59%
DOS/VSE	37%	32%
TSO	83%	77%
CICS	85%	83%
IMS/DC	50%	53%
OTHER DBMS	34%	30%

COMMUNICATIONS USE	% NOW	% FUTURE
SNA	86%	90%
BISYNC	80%	55%
ASYNC	81%	67%

NOTE: Data does not relate to site incidence but company incidence.

Future defined as "In Three Years" for all data presented.

IMPORTANCE OF FEATURES IN LAN ENVIRONMENT

	NOW	% 4/5	FUTURE	% 4/5	SIG. DIFFERENCE
Word Processing	3.8	63	4.1	78	Yes
Interlan E-Mail	3.3	42	3.7	56	No
Lan/Host E-Mail	3.5	50	4.1	67	Yes
Interlan Text Files	3.2	40	3.6	50	No
Lan/Host Test File	3.4	46	3.9	64	Yes
Translate W.P. Formats	3.1	45	3.5	47	No
Dissoss Compatability	3.1	35	3.6	49	Yes
Profs Compatability	2.7	27	3.1	35	No
Image Processing	2.4	22	3.4	45	Yes

NOTE: Significant difference indicates a statistically significant difference between means at the 90% confidence level, scale is 1 = unimportant; 5 = very important. % 4/5 indicates proportion of respondents indicating "High Importance."

GTE 9

RESULTS OF ACQUISITION SCREEN

FOR

GTE DATA SERVICES

June 20, 1986

INPUT

Parsippany Place Corporate Center
Suite 201
959 Route 46 East
Parsippany, New Jersey 07054
(201) 299-6999
Telex 134630

INTRODUCTION

- THIS ACQUISITION SCREEN CONSTITUTES PART II OF AN ENGAGEMENT OF INPUT BY GTEDS TO:
  1. DEVELOP SYSTEMATIC FINANCIAL DATA ON INFORMATION INDUSTRY FIRMS (PART I).
  2. SCREEN INPUT'S DATABASE OF COMPUTER SERVICES FIRMS TO CERTAIN SPECIFIC CRITERIA (PART II).

- THE CRITERIA FOR THE SCREEN WERE SET FORTH AS FOLLOWS BY GTEDS MANAGEMENT:
  - FIRM MUST OFFER PROFESSIONAL SERVICES AND/OR SOFTWARE.
  - FIRM SHOULD BE UNDER $10 MM REVENUE TO ALLOW FOR ACQUISITION OF A "PORTFOLIO" OF FIRMS AND TO MINIMIZE THE RISK OF ANY SINGLE ACQUISITION.
  - FIRM MUST HAVE SOME MATERIAL DEGREE OF TELECOMMUNICATIONS SPECIALIZATION.

- TO OPERATIONALIZE THE TELECOMMUNICATIONS CRITERION INPUT SET A CUT-OFF OF 10% OF REVENUE AS A MINIMUM TO BE DERIVED FROM TELECOMMUNICATIONS. THIS WAS CHOSEN SO AS TO REMOVE FIRMS LAYING "CLAIM" TO THE AREA WITHOUT SPECIFIC GROUNDS FOR THE CLAIM. AT THE SAME TIME 10% WAS NOT SUCH A HIGH PROPORTION THAT IT WOULD EXCLUDE SMALL BUT PROMISING SERVICES.

- AN AD-HOC LIST WAS PROVIDED BY GTEDS WHICH WAS MERGED WITH FIRMS CLAIMING A "UTITLITIES" SPECIALIZATION IN INPUT'S DATABASE. THE TOTAL NUMBER OF FIRMS REVIEWED WAS 423.

SCREEN PROCEDURE

- THE 423 FIRMS INCLUDED IN THE UNIVERSE WERE FIRST SCREENED FOR SIZE. 81 FIRMS (19.1%) WERE REMOVED AS BEING MATERIALLY OVER THE SIZE CRITERION ($10MM) SPECIFIED

- THE BALANCE OF 342 FIRMS WERE EACH CALLED BY INPUT RESEARCHERS WHO QUERIED AS TO THE EXISTENCE OF SPECIFIC SERVICES TO TELEPHONE COMPANIES.

- THIS PROCESS YIELDED 64 FIRMS PROVIDING P.S. AND/OR SOFTWARE TO TELCOS AND ACTIVELY AFFIRMING THIS FACT. AN ADDITIONAL 64 FIRMS HAVE NOT YET RESPONDED TO MULTIPLE QUERIES. IT IS PRESUMED THAT THE VAST MAJORITY DO NOT PROVIDE SERVICES TO TELCOS SINCE THERE HAS BEEN NO RESPONSE. CONTINUING EFFORTS WILL BE MADE TO CONTACT THE FIRMS.

- OF THE 64 TELCO-AFFIRMATIVE COMPANIES, 39 (60.9%) WERE ELIMINATED AS HAVING INADEQUATE REVENUES, i.e., LESS THAN 10%. 9.4% (6 FIRMS) AWAIT THE PROVISION OF FURTHER INFORMATION AND HAVE BEEN CALLED BACK AT LEAST ONCE DURING JUNE 1986.

- 19 FIRMS (29.7%) HAVE BEEN DETERMINED TO BE QUALIFIED UNDER CRITERIA (5.6% OF ALL THOSE CALLED) AND CONSTITUTE THE CONTENTS OF THESE BINDERS. AN ADDITIONAL 6 FIRMS ARE KNOWN TO HAVE 10% OR MORE OF REVENUES FROM TELCOS BUT INPUT AWAITS FURTHER INFORMATION ON PRODUCTS SERVICES FROM THE FIRMS.

- AS A FALL-BACK INPUT REQUESTED AND RECEIVED INFORMATION FROM MOST OF THE 39 FIRMS CONSIDERED "NOT QUALIFIED" UNDER THE REVENUE PROPORTION CRITERION. THIS LITERATURE WAS CLOSELY REVIEWED FOR ANY INTERESTING OR UNUSUAL PRODUCTS OR SERVICES. NONE HAVE BEEN FOUND TO DATE.

- FOR EACH COMPANY IN THIS BINDER THERE APPEARS AN OVERVIEW SHEET PROVIDING BASIC INFORMATION ON THE FIRM. WHEN AN "E" APPEARS ALONG SIDE A REVENUE NUMBER IT IS AN INPUT ESTIMATE BASED ON EMPLOYMENT AND INDUSTRY SECTOR. ALL OTHER REVENUE NUMBERS ARE COMPANY-PROVIDED.

- INPUT RECOMMENDS THAT GTEDS PERSONNEL CAREFULLY REVIEW THESE MATERIALS TO DETERMINE WHICH FIRMS, IF ANY, HAVE APPEAL TO GTEDS BASED ON SERVICE, PRODUCT, MATCH OR ENHANCEMENT TO EXISTING OFFERINGS, RELATIONSHIP TO GTEDS BUSINESS PLANS AND OTHER RELEVANT FACTORS. IT WILL BE POSSIBLE TO DEVELOP FURTHER INFORMATION ON ANY FIRMS WHICH PROVE TO BE OF INTEREST.

- AS INFORMATION BECOMES AVAILABLE ON THE STATUS OF UNRESOLVED FIRMS, THIS WILL BE TRANSMITTED TO GTEDS.

YG.7.9

"WORK MADE FOR HIRE" AND CONFIDENTIALITY AGREEMENT

DATED AS OF MARCH 31, 1986

In connection with work to be performed for GTE Data Services Incorporated (GTEDS) by INPUT pursuant to the Letter Agreement between INPUT and GTEDS dated March 25, 1986 ("Letter Agreement") pertaining to GTEDS' project known as Compound Document Services ("Project"), INPUT and its undersigned employee ("Employee") expressly agree that the work to be performed pursuant to the Letter Agreement is specifically ordered or commissioned for use as a contribution to a collective work, and shall be considered a work made for hire as defined by the Copyright Act, 17 U.S.C. §101.

INPUT and Employee recognize that in order to perform this work, they will need access to certain information which is confidential and proprietary to GTEDS and its suppliers and customers, and which GTEDS is unwilling (or in some cases not legally authorized) to disclose without adequate assurances that such information will be properly used and protected. Accordingly, INPUT and Employee voluntarily assume the following obligations:

In consideration of the disclosure of confidential and proprietary information, INPUT and Employee hereby agree as follows:

1. "Confidential and proprietary information" shall mean information in oral or written form relating to the business or products of GTEDS, its suppliers and customers, including present status, plans and capabilities as well as the technology, architecture, data bases, and software associated therewith.

2. INPUT and Employee shall maintain all confidential and proprietary information disclosed or received in confidence, and shall use it only for the purpose of performing work on the Project; shall not disclose confidential and proprietary information to third parties; shall not copy confidential and proprietary information, in whole or in part, without the prior written consent of GTEDS (except when such copying is done as a function of the work being performed); and shall return the original and all copies of confidential and proprietary information to GTEDS promptly following completion of the Project or upon the request of GTEDS, whichever shall first occur.

3. INPUT and Employee shall have no obligation to keep confidential information which:

   a. is already in their possession prior to disclosure to by GTEDS;

   b. is, or becomes, public knowledge other than by breach of this agreement;

   c. is disclosed to them by a third party rightfully in possession of same; or

   d. is required to be disclosed by valid order of a court or other governmental body, or otherwise required by law.

4. INPUT's and Employee's obligations hereunder with respect to handling, maintaining in confidence, and limited use of confidential and proprietary information disclosed during work on the Project shall survive the completion of the

Project. INPUT's and Employee's obligations hereunder shall terminate five years from the date hereof, and INPUT sand Employee shall thereafter have no obligation with respect thereto.

While on GTEDS' premises, Employee agrees to observe all working rules applicable to GTEDS employees doing similar work.

FOR INPUT:

Signature

D.W. Fostle
Printed Name

Vice President
Title

April 8, 1986
Date

EMPLOYEE:

Lisa Percy
Signature

Lisa Percy
Printed Name

4/8/86
Date

46,79

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FOR INPUT:

Signature

D.W. Fostle
Printed Name

Vice President
Title

April 8, 1986
Date

EMPLOYEE:

Signature

SOCELYNE HILAIRE
Printed Name

4/8/86
Date

YG79

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FOR INPUT:

Signature

D.W. Fostle
Printed Name

Vice President
Title

April 8, 1986
Date

EMPLOYEE:

Signature

Betty Ann Van Benschoten
Printed Name

4/08/86
Date

INPUT

ORDER/INVOICE/FULFILLMENT

ORIGINATOR (SIGNATURE) [signature] PREPARED BY: [signature] DATE: 4/07/6

ACTIVITY

- [x] NEW ORDER
- [ ] CONTINUATION
- [ ] CHANGE
- [ ] CANCEL
- [ ] SPECIAL:

- [ ] FULFILLMENT ONLY
- [x] SINGLE INVOICING
- [ ] MULTI-INVOICING: 2
  NO. INVOICES
- [ ] PENDING:

COMMISSION TO:		SOLD BY:		APPROVED
[signature]	100%	[signature]	100%	[signature]
	%		%	INITIAL
	%		%	9/07/6
	%		%	DATE

PRODUCT

- [ ] SUBSCRIPTION
- [x] CUSTOM
- [ ] MULTICLIENT
- [ ] REPORTS
- [ ] COPIES
- [ ] CONSULT./PRESENT.
- [ ] TAPES/MATERIALS
- [ ] REIMBURSED COSTS

US	UK	PROJ. I.D./YEAR	TITLE OR DESCRIPTION	AMOUNT
		4619	O/A PROJECT	$38,750

CLIENT AUTH.

P.O. # _____ INPUT CONTRACT [ ] LETTER [ ] VERBAL [ ]

ATTACH ALL AUTHORIZING DOCUMENTS TO WHITE (CONTRACT) COPY.

INVOICE

SHIP TO:*
NAME MRS. PATRICIA H. PRICE
TITLE MGR, NEW BUSINESS
COMPANY GTE DATA SVCS
ADDRESS FIRST FLA TOWER
P.O. 1549
TAMPA, FL 33601
PHONE (813) 274-3096

INVOICE TO: (IF DIFFERENT)
NAME
TITLE
COMPANY
ADDRESS
PHONE ( )

* [ ] Check here if more than one shipping address and attach names and addresses to green (fulfillment) copy.

* [ ] Check here for address change to mail list.

INVOICE TO READ: (FOR OTHER THAN STANDARD WORDING)

SPECIAL INSTRUCTIONS FOR HANDLING, BILLING, STAGGERED OR DELAYED PAYMENTS, ETC.

50/50 SPLIT

O.I.F. ONLY

INV. COMP.	BY:	DATE:	CLIENT #:	ORDER #:	INV. #:	MULTI-INVOICING ____ OF ____

FULFILLMENT

ITEM DESCRIPTION OR TITLE	NO.	BY	DATE	ITEM DESCRIPTION OR TITLE	NO.	BY	DATE

FULFILLMENT TO BE COMPLETED IN: [ ] PALO ALTO [ ] LONDON [ ] OTHER _____

ORIGINATOR/SHIPPING

- WHITE - ACCOUNTING
- GREEN - ACCOUNTING
- YELLOW - ACCOUNTING
- PINK - ORIGINATOR
- GOLDENROD - REGIONAL SALES MANAGER

R 1/81

1985 QUARTERLY SCHEDULING PLAN Q1

PROJECT: YGT9

PROJECT LEADER: FOSTER

DATE: 4/10/6

ACTIVITY / PROJECT	NAME	MAN DAYS	EFFI-CIENCY	ESMD	CORP WEEK END	1 1/4	2 1/11	3 1/18	4 1/25	5 2/1	6 2/8	7 2/15	8 2/22	9 3/1	10 3/8	11 3/15	12 3/22	13 3/29
					CORPORATE/WEEK ENDING	JANUARY				FEBRUARY				MARCH				
PROJECT AUTHORIZATION/ SPECIFICATION	DLF			1			1											
Q DESIGN				1				1										
Q APPROVAL/ REVIEW MEETING				1				1										
INTERVIEWS ON SITE ( ) NO.																		
INTERVIEWS ON PHONE ( ) NO.	RA	3.0	.5	15							15							
DATATAB AND ANALYSIS	DLF			4														
WRITING	DLF			2														
ABSTRACT																		
QC																		
REPORT PROD. AND SHIPPING																		1
PRESENTATION				1														1
"THANK YOU" MAILED				1														
PLAN																		
ACTUAL																		
CUM P/A																		

R12/83

81

INPUT

TITLE C/A "FEASIBILITY"

CLIENT GTE DATA SVCS

CONTRACT: ATTACHED____ TO FOLLOW____ LETTER ✓ VERBAL____

PROJECT LEADER_____ CODE_____

DATE STARTED 3/31/86 PLANNED COMPLETION DATE 6/30/86

LEVEL OF EFFORT (Professional Man Days) 31

TOTAL CONTRACT VALUE: $ 38,750

REVENUE DISTRIBUTION (% or $) INPUT US/LTD INPUT LTD____

REIMBURSABLE EXPENSES: NO____

YES ✓

EXP. BUDGET_____ TO COVER: TRAV: ✓

TEL: ____

RPT. PREP.: ____

OTHER: ____

BILLING SCHEDULE DESCRIPTION 50/50 SPLIT

PROJECT DESCRIPTION

DETERMINE FEASIBILITY OF O/A PRODUCT

W/ MODEL DC APPLICATIONS

INDICATE TYPE OF CUSTOM WORK: REPORT____ PRESENTATION ✓

THANK YOU PACKAGE: YES ✓ NO____

FLAMINGO FLASH ANALYSIS JUNE 5, 1986

COMMERCIAL (N=80) VS GTEDS (N=20)

	O/A	GTEDS	SIG @ 90%
Q23 E. Mail In	3.5	4.3	Yes
Q31 S&R - No Revis	2.4	3.2	Yes
Q46 For Lang.	2.2	1.4	Yes
Q53 Phone Cap.	3.2	3.8	Yes

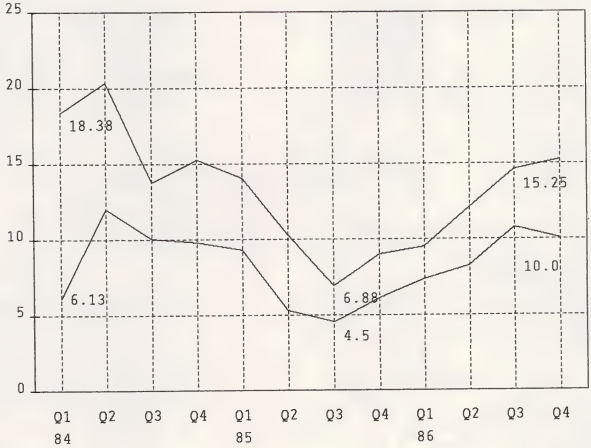
	O/A	% 4/5	GTEDS	% 4/5	SIG
Q57 6K	2.8	27.5	2.7	25.0	No
Q58 4K	3.3	38.8	3.5	45.0	No
Q59 2K	3.8	58.8	4.1	60.0	No

Statistically significant differences between the general or "commercial" sample and GTEDS were found in only four items, we conclude that, in the main, commercial requirements and GTEDS requirements for a "Flamingo" product are very similar.

YGT9

CHRZ COMMON PRICE, HI/LO

QTRLY, FY 84,85,86 (2/28 YE)



Note: Data are quarterly HI's and LO's.

COMPUTER HORIZONS

INDUSTRY SEGMENTS & PRODUCTIVITY

	1986		1985		1984		1983
COMM	21,800	42.8%	20,500	46.2	15,100		5,800
FIN	11,400	22.4	10,700	24.1	13,600		10,700
OTHER*	17,100	33.6	12,900	29.0	5,500		3,700
BALANCE	592	1.2	311	0.7	180		149
PERSONS	754	11.5%	676	13.6%	595	56.6%	380
COB's	623	10.5%	564	9.7%	514	57.7	326
RPE ($K)	67.5		65.7		57.8		53.6
RP COB	81.7		78.7		66.9		62.4

INCLUDES INDUSTRIAL, FEDERAL GOV'T

COMPUTER HORIZONS

(CHRZ)
($000)

FY = 2/28

	REV	NINC	EPS ¢	ASSETS	NETMAR %	ROA %
1980	9,973	360	.18	3,376	3.61	10.66
1981	10,294	293	.13	3,431	2.85	8.54
1982	14,464	424	.18	4,705	2.93	9.01
1983	20,349	766	.35	6,928	3.76	11.06
1984	34,380	2,250	.91	13,942	6.54	16.14
1985	44,411	2,019	.78	16,835	4.55	11.99
1986	50,892 +14.6%	2,211 +9.5%	.86	19,872	4.34	11.13

Market Value 6/18/86 = $35,820,000 @ 13 7/8

16.2 x P/E TRAILING 12

BETA = 2.38

NASDAQ, NR

July 19, 1986

Ms. Shaun Brown GTEDS Billing/Acc Pay
813-224-8312

Invoice # 13155 YGT9 April 8, 1986
P.O. 54670
Amount $19,375

Will investigate and immediately send payment to California.

INPUT NEW JERSEY

ENCLOSED PROJECT 7679

- CONTRACT
- OIF ✓
- W.S. ✓
- SKED ✓
- EXPENSES
- INVOICES

DATE SENT: 4/11/80 BY: [illegible]

DATE RECEIVED: BY:

EXCEPTIONS: Note below or check NONE

INPUT NEW JERSEY

ENCLOSED	PROJECT
• CONTRACT	YGT9
• OIF	
• W.S.	
• SKED	
• EXPENSES	
• INVOICES	

DATE SENT: 4/8/86 BY: [illegible]

DATE RECEIVED: _____ BY: _____

EXCEPTIONS: Note below or check NONE _____

YGT9

ADVANCED OFFICE AUTOMATION

THE MARKET FOR SPECIFIC DEVICE/SERVICE CONFIGURATIONS AMONG PC USERS & MIS MANAGERS

PREPARED ESPECIALLY FOR
GTE DATA SERVICES

JULY 28, 1986

INPUT
Parsippany Place Corporate Center
Suite 201
959 Route 46 East
Parsippany, New Jersey 07054

INPUT

INTRODUCTION

- STUDY WAS DEVELOPED IN CONJUNCTION WITH GTEDS PERSONNEL WITH THREE PRIME OBJECTIVES:
  1. PROVIDE CONFIRMATION/DISCONFIRMATION OF THE NEED FOR A JOINT RELATIONSHIP TO ADDRESS THE MARKET.
  2. CALIBRATE THE MARKET NEEDS FOR SPECIFIC PRODUCTS AND SERVICES WHICH GTEDS MIGHT OFFER INDIVIDUALLY AND JOINTLY.
  3. ESTABLISH A BASELINE MARKET ASSESSMENT WHICH CAN BE EXPANDED, SEGMENTED AND REFINED IF NEEDED, I.E., IF BASELINE ASSESSMENT SHOWS SUFFICIENT FUNDAMENTAL DEMAND.

- AS INITIALLY FORMULATED, TWO KEY GROUPS WERE TO BE ASSESSED:
  1. USERS OF PERSONAL COMPUTERS IN LARGE CORPORATIONS.
  2. MIS MANAGEMENT IN LARGE CORPORATIONS.

- AS INITIALLY DESIGNED, THE STUDY WAS FRAMED TO INCLUDE:
  1. 80 INTERVIEWS WITH USERS, RANDOMLY SELECTED FROM DEPARTMENTS IN MANUFACTURING, INSURANCE, BANKING.
  2. 40 INTERVIEWS WITH MIS MANAGEMENT IN LIKE COMPANIES.

- THE STUDY WAS SUBSEQUENTLY EXPANDED TO INCLUDE ADDITIONAL INTERVIEWS WITH:
  1. 20 GTE TELCO PC USERS SELECTED BY GTEDS ON A DEPARTMENTAL "LIKELIHOOD" CRITERION.
  2. 20 TEXAS INSTRUMENTS (T.I.) PC USERS AS PROVIDED BY T.I.
- AN AD-HOC SURVEY GROUP WAS SUBSEQUENTLY ADDED AT BELL TELCOS.
- TWO QUESTIONNAIRES (ONE FOR USERS, ONE FOR MIS) WERE DEVELOPED BY INPUT WITH REVIEW AND CONTRIBUTIONS BY FLAMINGO BUSINESS AND TECHNICAL DEVELOPMENT GROUPS. BECAUSE OF THE COMPLEXITY AND RANGE OF THE PRODUCTS/SERVICES TESTED THIS PROVED AN ARDUOUS TASK.
- INTERVIEWS WERE CONDUCTED FIRST AMONG USER GROUPS IN APRIL AND MAY, 1986. MIS INTERVIEWS WERE CONDUCTED IN LATE MAY AND JUNE, 1986.
- RESULTS OF INTERIM ANALYSIS ON KEY POINTS WERE COMMUNICATED TO GTEDS AS INTERVIEWS WERE GATHERED.

KEY CONCEPTS TESTED

- THE "FLAMINGO" PRODUCT/SERVICE SET AS DEVELOPED FOR TESTING EXHIBITED SUBSTANTIAL COMPLEXITY. CONCEPTS TESTED INCLUDED:
  1. A NEW PC - ATTACHING DEVICE FOR GRAPHICS AND TEXT AND ITS APPLICATIONS.
  2. SOFTWARE FOR THE CONVERSION OF INCOMPATIBLE DATA SYSTEMS TO COMPATIBLE FORMATS (TEDS AND SOFTSWITCH - LIKE FUNCTIONS).
  3. MAINFRAME STORAGE OF CONVERTED AND UNCONVERTED DOCUMENTS, IMAGES AND MESSAGES.
  4. VARIOUS E-MAIL AND VOICE MAIL OPTIONS IN A PC CONTEXT.
  5. TEXT, IMAGE AND COMBINED TEXT/IMAGE CAPABILITIES.
  6. DELIVERY OPTIONS EMPHASIZING SERVICE AND IN-HOUSE MODES.
  7. ATTRACTIVENESS AT VARIOUS PRICE POINTS FOR FEATURE SETS AND SOFTWARE.

- UNDER THESE MAJOR POINTS DETAILED SUB-POINTS WERE DEVELOPED AND TESTED FOR BOTH USER AND MIS-RESPONDENTS.

INPUT

- ADDITIONALLY SUBSTANTIAL DATA WAS DEVELOPED SPECIFIC TO EACH INTERVIEW TYPE. FOR EXAMPLE PC CONFIGURATION DATA WAS OBTAINED FROM RESPONDENTS AS WERE KEY APPLICATIONS. FROM MIS REPONDENTS DATA WAS GATHERED ON CURRENT SYSTEM SOFTWARE UTILIZATION AND CORPORATE GROWTH OF PC UTILIZATION IN VARIOUS CONNECTIVITY MODES. THIS DATA IS USED TO CONDITION AND BOUND THE FLAMINGO OPPORTUNITY.

INPUT

MAIN USER GROUP CHARACTERISTICS

- USERS IN SAMPLE HAD 2,090 PC'S WITH DEPARTMENTAL POPULATION TOTAL OF 5,965 PERSONS EQUAL TO A 35% PENETRATION RATE.

- MACHINES CARRY SUBSTANTIAL MEMORY:

640K	=	53%
512K	=	17%
256K	=	17%
128K	=	3%
64K	=	5%
OTHER	=	5%
		100%

- 81% OF MACHINES ALSO HAVE A HARD DISK INSTALLED, OF THESE 49% REPORT 10 MEG DISKS, 35% 20 MEG, 14% 30 MEG AND 2% OTHER.

- 51% REPORT THE USE OF MONOCHROME MONITORS, 45% HAVE COLOR MONITORS WHILE 4% REPORT USING BOTH DEVICES.

- 69% REPORT THE ABILITY TO DO GRAPHICS ON THE MONITOR WHILE 29% DO NOT HAVE THE ABILITY, 2% DO NOT KNOW IF THEY HAVE GRAPHICS CAPABILITY.

INPUT

- 92% OF RESPONDENTS INDICATE THAT THEIR PC'S HAVE A PRINTER DIRECTLY ATTACHED, OF THESE PRINTERS 58% ARE DOT MATRIX, 30% ARE DAISYWHEEL WHILE 12% ARE LASER PRINTERS.

- ADDITIONALLY 52% OF R'S REPORT PRINTER SHARING WHILE 48% DO NOT SHARE. SHARERS HAVE AN AVERAGE OF 1.4 ADDITIONAL PRINTERS AVAILABLE. AS WOULD BE EXPECTED, THIS GROUP HAS A HIGHER PROPORTION OF THE MORE EXPENSIVE LASERS. LASERS ACCOUNT FOR 42% OF THE SHARED PRINTERS, 25% ARE DAISY WHEELS WHILE 31% ARE DOT MATRIX, 2% ARE "OTHER."

- THIS DATA INDICATES THAT NOT LESS THAN 22% OF THE SAMPLE HAS A LASER PRINTER AVAILABLE AND THAT THE PROPORTION MAY BE AS HIGH AS 33%. SUCH A PRINTER IS IMPORTANT IN THAT IT IS BOTH EXPENSIVE AND VIRTUALLY ESSENTIAL FOR REPRODUCTION OF LOGOS, SIGNATURES AND OTHER ADVANCED FLAMINGO CAPABILITIES.

DISTRIBUTION OF PC'S BY TYPE

TYPE	PROPORTION	
IBM PC	11%	
PC XT	38%	- IBM = 75%
PC AT	26%	
CLONE PC	12%	
OTHER	13%	
	100%	

- RESPONDENTS REPORT 87% OF INSTALLED BASE TO BE IBM PC-TYPE AND CLONES. COMPAQ AND ATT 6300 MAIN CLONES IN USE. OTHER INCLUDES McINTOSH, II & H/P.

- AT A MINIMUM, 64% OF INSTALLED BASE (XT & AT) ARE FLAMINGO-AMENABLE. PROPORTION MAY BE HIGHER FOR SOME FLAMINGO CONFIGURATIONS WHICH COULD FIT ON A "FAT" PC WITH BIG MEMORY AND HARD DISK. ENOUGH SLOTS? POSSIBLE ALSO THAT FLAMINGO WILL FIT ON COMPAQS, RESULTING IN A FURTHER RISE IN POTENTIAL INSTALLS.

- WE CONCLUDE THAT MACHINE TYPE IS NOT A MATERIAL IMPEDIMENT TO FLAMINGO PROLIFERATION. INSTALLATION CERTAINLY POSSIBLE ON 64% AND PERHAPS AS MUCH AS 87% OF POPULATION.

INPUT

GTE & TI USER CHARACTERISTICS

- THE GTE PC PENETRATION AT 36.4% IS INSIGNIFICANTLY DIFFERENT FROM THAT OF THE GENERAL USER POPULATION. TI WITH A 69.1% PC PENETRATION IS WILDLY AT VARIANCE WITH THE NORM. THIS VARIABLE AND OTHER CHARACTERISTICS OF THE TI RESPONDENTS LEAD INPUT TO QUESTION THE LIST PROVIDED BY TI. IN NO CASE SHOULD THE TI RESPONSE BE GENERALIZED BEYOND THE COMPANY. INPUT BELIEVES THAT THE TI LIST WAS SUBJECT TO SOME UNKOWN OPERATIONS WHICH MAY HAVE RESULTED IN EXTREME RESPONDENT BIAS.

- NONETHELESS, DATA WILL BE PRESENTED FOR TI IN THE INTEREST OF COMPLETENESS.

PC DISTRIBUTION BY TYPE

TYPE	GTE %	TI %
IBM PC	8%	5%
PC XT	71%	0%
PC AT	13%	5%
CLONE PC	4%	0%
OTHER	4%	0%
TI PC	0%	90%

INPUT

- OBSERVE THAT TELOPS HAS STANDARDIZED MORE HEAVILY THAN TYPICAL ON THE XT. A MINIMUM OF 84% OF TELOPS MACHINES ARE AMENABLE TO FLAMINGO ON A TYPE CRITERION.

- TI HAS VERY SUCCESSFULLY IMPOSED IT OWN MACHINES WHICH PRESUMABLY CAN EMPLOY FLAMINGO PRODUCT. THESE MACHINES HAVE NO PENETRATION ELSEWHERE IN THE SAMPLE.

- THIS TI POLICY WOULD LEAD INPUT TO RESPECTFULLY RECOMMEND THAT GTEDS OBTAIN A GUARANTEE FROM TI THAT ANY FUTURE DEVELOPMENT FOR ANY CO-VENTURE EMPLOY IBM BRAND MACHINES TO ELIMINATE THE POSSIBILITY OF ANY IN-COMPATABILITY APPEARING UNEXPECTEDLY AND THAT DEMONSTRATION SYSTEMS FOR "PUBLIC" USE BE IBM BRAND TO REMOVE ANY DOUBTS FROM THE MIND OF PROSPECTS. THIS COMMENT SHOULD NOT BE TAKEN AS AN ADVERSE REFLECTION ON TI EQUIPMENT OR ENGINEERING PRACTICES. IT SIMPLY RECONGNIZES THE IBM MARKET SHARE FOUND, I.E., 75%.

OTHER GTE & TI GROUP CHARACTERISTICS

- MACHINE MEMORY CHARACTERISTICS ARE SIMILAR TO THE MAIN SAMPLE. IT IS WORTH NOTING 40% OF GTE USERS COULD NOT SPECIFY THE MEMORY SIZE OF THEIR MACHINE.

- 80% OF GTE RESPONDENTS REPORTED HARD DISK INSTALLATION, THE SAME AS THE MAIN POPULATION. TI R'S REPORTED 90% HARD DISK INSTALLATIONS.

- GTE EXCEEDS THE POPULATION IN COLOR MONITORS (70% VS. 51%) WHILE 20% HAD MONO MONITORS AND 10% HAD BOTH. T.I. MONITORS WERE 95% COLOR AND 5% MONO, SUBSTANTIALLY DIFFERENT FROM THE POPULATION.

- 85% OF GTE USER CLAIM THE ABILITY TO DO GRAPHICS ON THE MONITOR WHILE 95% OF TI RESPONDENTS CLAIM GRAPHIC CAPABILITY COMPARED TO 69% FOR THE GENERAL POPULATION THIS IS A MODERATE POSITIVE FOR INTERNAL GTE USE.

- 90% OF GTE USERS REPORT AN ATTACHED PRINTER WHILE 95% OF TI USERS SO REPORT.

- AT GTE 83% OF PRINTERS ARE DOT MATRIX AND 17% DAISYWHEEL. NO LASER PRINTERS WERE REPORTED ATTACHED, A POTENTIALLY SERIOUS COST-INCREASER FOR FLAMINGO ADOPTION. AT TI ONE LASER WAS REPORTED (5%) WHILE 5% WERE DAISYWHEEL AND 90% DOT MATIRX. IT APPEARS THAT BOTH COMPANIES LAG THE POPULATION IN ATTACHED ADVANCED PRINTER TECHNOLOGY.

INPUT

- 60% OF GTE USERS REPORT PRINTER SHARING WHILE 55% OF TI USER SO REPORT. THESE VALUES ARE NOT SIGNIFICANTLY DIFFERENT FROM THE GENERAL POPULATION AT 52%. LASERS ON A SHARED BASIS ARE PRESENT AT 30% OF GTE SITES AND 40% OF TI SITES. AS A PRACTICAL MATTER THIS SOMEWHAT ALLEVIATES THE PROBLEM OF LOW ATTACHED LASER INCIDENCE FOR FLAMINGO GRAPHICS.

INPUT

PACKAGE UTILIZATION

- IN RANK ORDER OF FREQUENCY OF MENTION PACKAGES EMPLOYED BY RESPONDENTS WERE AS FOLLOWS:

	TYPE	PROPORTION USING	MEAN RANK
1.	SPREAD SHEET	82.5%	1.7
2.	WORD PROCESSING	71.3%	2.4
3.	DBMS	58.8%	2.6
4.	3270 EMULATOR	38.8%	1.6
5.	GRAPHICS	35.0%	3.4
6.	E-MAIL PACKAGE	31.3%	1.6
7.	OTHER*	25.0%	1.6
8.	CAD/CAM	8.8%	1.9

- MEAN NUMBER OF PACKAGES IN USE IS 3.5/RESPONDENT, A CONSIDERABLE NUMBER. OBSERVE THAT THE TOP 3 PACKAGES ARE IN USE BY THE MAJORITY OF USERS BUT THAT THE SPREAD SHEET IS RANKED WELL AHEAD OF THE NEXT 2 APPLICATIONS. ALSO OBSERVE THAT TO THOSE USING THEM LESS COMMON PACKAGES CAN BE VERY IMPORTANT. GRAPHICS IS NOTABLE IN TERMS OF ITS LOW RANKING BY THOSE WHO HAVE IT.

o PARENTHETICAL QUESTION: HOW CAN FLAMINGO HANDLE SPREAD SHEET DATA ENTRY IN AN EFFECTIVE FASHION?

* INCLUDES CALENDAR, COMPILERS, MISCELLANEOUS COMM. PACKAGES, CUSTOMIZED APPLICATIONS, 3 MENTIONS OF ATLAS MAPPING.

INPUT

PC COMMUNICATIONS

- RESPONDENTS REPORT THAT 57% OF THEIR PC'S HAVE SOME FORM OF COMMUNICATIONS CAPABILITY, I.E., ARE NOT STAND ALONE MACHINES. MULTIPLE COMMUNICATIONS MODES ARE COMMON WITH COMMUNICATING MACHINES EMPLOYING AN AVERAGE OF 2.7 FUNCTIONS.

- BASED ON COMMUNICATING RESPONDENTS, FUNCTIONS ARE REPORTED AS FOLLOWS:

FUNCTION	PROPORTION
DEDICATED LINE TO MAINFRAME	57%
CONNECTS TO COMPANY E-MAIL SYSTEM	57%
LAN, COMMUNICATES OUTSIDE DEPARTMENT	32%
DIAL-UP TO MAINFRAME	32%
VAN CONNECTION	25%
PHONE TO NON-MAINFRAME COMPUTER	20%
CONNECTS TO 3RD PARTY E-MAIL	16%
INTRA-DEPARTMENTAL LAN	7%

- NOTE THAT THE MAINFRAME IS THE PRIME CONNECTION AND THAT COMPANY E-MAIL IS EQUALLY WIDESPREAD (57% EACH OR 31% OF TOTAL SAMPLE). MATERIAL MINORITIES HAVE THE ABILITY TO THEORETICALLY COMMUNICATE "ANYWHERE" THROUGH DIAL-UP OR VAN MODES (32% DIAL, 25% VANS OR 18% & 14% OF THE SAMPLE).

INPUT

FUNCTION	GTE PROPORTION	TI PROPORTION
COMPANY E-MAIL	87%	95%
DIAL-UP TO MAINFRAME	60%	32%
LAN, COMM. OUTSIDE DEPT.	53%	68%
PHONE TO NON-MAINFRAME	33%	32%
VAN CONNECTION	33%	21%
DEDICATED LINE	27%	84%
CONNECTS TO 3RD PARTY E-MAIL	13%	16%
INTRA-DEPARTMENT LAN	13%	16%

- NOTE THE RADICAL DIFFERENCES IN COMMUNICATIONS MODES BETWEEN THE TWO COMPANIES. TI IS A HEAVY USER OF DEDICATED LINES WHERE AS GTE IS QUITE LIGHT, PROBABLY A HERITAGE OF "OFFICIAL TOLL."

- BOTH COMPANIES MAKE MUCH MORE USE OF E-MAIL THAN THE GENERAL POPULATION.

- COMMUNICATING LANS ARE MATERIALLY MORE PERVASIVE IN BOTH COMPANIES THAN THE GENERAL POPULATION (32%).

INPUT

PC COMMUNICATIONS

- COMMUNICATIONS INCIDENCE IS HIGHER AT BOTH GTE (75%) AND TI (95%) THAN IN THE WORLD AT LARGE (57%). THIS IS STATISTICALLY SIGNIFICANT AT THE 90% LEVEL. OF THOSE COMMUNICATING AT GTE THE AVERAGE NUMBER OF FUNCTIONS IS 3.3 AND AT TI THE AVERAGE IS 3.7. THIS COMPARES TO 2.7 FOR THE MAIN SAMPLE.

INPUT

- CONNECTIVITY PATTERNS ARE SO DIFFERENT AT BOTH COMPANIES VERSUS "THE WORLD" THAT INPUT RECOMMENDS GREAT CAUTION IN EXTRAPOLATING FROM COMPANY EXPERIENCE BY PLANNERS AND DESIGNERS. LINKAGES AT BOTH COMPANIES ARE ATYPICAL. THESE PATTERNS MAY INFLUENCE DESIGN AND BUSINESS DECISIONS IF NOT MONITORED.

INPUT

PC USAGE

- RESPONDENTS ARE HEAVY USERS OF THEIR PC'S REPORTING A MEAN DAILY USAGE OF 4.0 HOURS ± 0.4 HOURS AT THE 90% CONFIDENCE INTERVAL. THE MINIMUM REPORTED USAGE WAS 1 HOUR PER DAY, THE MAXIMUM 9 HOURS (!).

- EVEN MORE SIGNIFICANTLY TEXT/DATA ENTRY CONSTITUTED 56% OF PC TIME ≠6% AT 90% CONFIDENCE. EXPRESSED ANOTHER WAY, THE MEAN RESPONDENT REPORTS SPENDING THE MAJORITY OF HIS/HER TIME ENTERING DATA OR TEXT. THIS IS BELIEVED TO BE A POWERFUL REASON FOR THE INTEREST IN AUTOMATED TEXT/DATA ENTRY DEVICES.

- IN COMPARING COMMUNICATING AND NON-COMMUNICATING PC USERS FOR PROPORTION OF USAGE SPENT IN DATA ENTRY WE FIND THAT NON-COMMUNICATING USERS SPEND 51% OF THEIR TIME IN TEXT/DATA ENTRY WHILE "COMMUNICATORS" SPEND 61% OF THEIR TIME. WHILE NOT A STATISTICALLY SIGNIFICANT DIFFERENCE AT 90% CONFIDENCE THIS DATA SHOWS THAT:

1. SHARED FILES ON LANS OR MAINFRAME ACCESS DOES NOT REDUCE TIME SPEND IN ENTRY MODE.
2. COMMUNICATIONS FUNCTIONS MIGHT INCREASE TIME SPENT IN ENTRY DUE TO E-MAIL, DATA REPORTING AND SIMILAR FUNCTIONS.

- IN ANY CASE ENTRY IS AT LEAST AS LARGE A PROBLEM FOR COMMUNICATORS AS NON-COMMUNICATORS.

INPUT

TI & GTE PC USAGE

- GTE USERS REPORT 2.3 AVERAGE HOURS OF USE PER DAY ± .7 HOURS AT THE 90% CONFIDENCE INTERVAL. THIS IS STATISTICALLY SIGNIFICANTLY LESS THAN THE 4.0 HOURS REPORTED BY THE MAIN GROUP.

- TI USERS REPORTED AN AVERAGE OF 3.1 HOURS ± .8 HOURS AT THE 90% INTERVAL. THIS IS NOT SIGNIFICANTLY DIFFERENT FROM EITHER THE MAIN GROUP OR FROM GTE.

- TI USAGE RANGE WAS 1-8 HOURS; GTE USAGE RANGE WAS 0.5 TO 6 HOURS.

- GTE R'S REPORTED SPENDING 48% OF THEIR TIME IN TEXT/DATA ENTRY ± 14% AT 90% CONFIDENCE WHILE TI R'S CLAIMED 45% ± 13%. VALUES REPORTED ARE NOT SIGNIFICANTLY DIFFERENT FROM THE MAIN GROUP.

- THERE IS NO MEANINGFUL RELATIONSHIP BETWEEN TOTAL PC TIME DAILY AND PROPORTION SPENT IN ENTRY. THIS SUGGESTS THAT DATA/TEXT ENTRY IS A PERVASIVE CHORE FOR HEAVY, MEDIUM AND LIGHT USERS.

GTE & TI PACKAGE UTILIZATION

TYPE	GTE PROPORTION	RANK	TI PROPORTION	RANK
WORD PROCESSING	85%	1.9	70%	2.6
SPREAD SHEET	80%	1.2	75%	2.5
E-MAIL	70%	3.2	65%	2.1
OTHER	65%	1.4	65%	1.4
GRAPHICS	50%	3.0	45%	4.6
DBMS	45%	3.4	45%	3.8
3270 EMULATOR	30%	4.3	75%	2.7
CAD/CAM	0%	xx	25%	4.8

MEAN NUMBER OF PACKAGES IN USE FOR GTE IS 4.3 PER RESPONDENT. FOR TI THE COMPARABLE NUMBER IS 4.7. THIS COMPARES TO 3.5 FOR THE MAIN GROUP.

- OBSERVE THE HIGHER INCIDENCE OF E-MAIL PACKAGES COMPARED TO THE MAIN SAMPLE IN BOTH COMPANIES AS WELL AS THE HIGH PROPORTION OF 3270 EMULATION AT TI.

DBMS USE IS LESS WIDESPREAD AT GTE AND TI THAN IN THE GENERAL GROUP AND WHEN PRESENT RECEIVES A LESS POWERFUL RANKING. GRAPHICS PACKAGES ARE OF NOTABLY LOW IMPORTANCE AT TI.

- AS IN THE GENERAL GROUP, OTHER PACKAGES ARE IMPORTANT WHERE THEY EXIST AND THEY ARE MUCH MORE PREVALENT IN THESE TWO COMPANIES THAN IN THE MAIN GROUP.

- "OTHER" PACKAGES AT TI EMPHASIZED PROGRAM DEVELOPMENT. THERE WAS NO TREND IN THE GTE "OTHER" CATEGORY WHICH ONLY EMPHASIZED "INTERNALLY" DEVELOPED PROGRAMS.

FUNCTIONAL RATINGS

- A LARGE GROUP OF HIGHLY SPECIFIC FLAMINGO FUNCTIONS/ FEATURES WERE TESTED ON RESPONDENTS FOR PERCEIVED UTILITY. THESE ITEMS WERE ADMINSTERED EMPLOYING A 1-5 SCALE WITH "ONE" DEFINED AS "NOT USEFUL" AND "FIVE" DEFINED AS "VERY USEFUL" IN THE CONTEXT OF "THE WORK YOU DO ON YOUR JOB." SUBSTANTIAL INTER-ITEM VARIATION WAS OBSERVED.

- IN THE MAIN GROUP SOME INDUSTRY VARIATION WAS NOTED BETWEEN MANUFACTURING, BANKING AND INSURANCE SEGMENTS. WHEN OBSERVED, THERE WAS A GENERAL TENDENCY FOR MANUFACTURING RESPONDENTS TO RATE SOMEWHAT MORE HIGHLY THAN BANKING OR INSURANCE.

- FEATURES WILL BE PRESENTED IN RANK ORDER OF MEAN PERCEIVED UTILITY. IN GENERAL AN INTERVAL IN EXCESS OF 0.5 RATING POINTS WOULD ACHIEVE STATISTICAL SIGNIFICANCE AT THE 90% LEVEL.

- ASTERISK (*) APPEARING ALONGSIDE PROPORTION INDICATES UNUSUAL DISTRIBUTION OF RESPONSES SHOWING STRONG BUT DIVIDED OPINION ON FUNCTION LISTED. IN GENERAL THIS TENDENCY RELATES TO "ADVANCED" DRAWING AND FAX CAPABILITIES.

UTILITY RATINGS RANK ORDER

Q#	FUNCTION	MEAN VALUE	PROPORTION 4/5 (%)	IND DIFF
20A	ENGLISH HOST DB ACCESS	4.2	76	
26	EDIT SCANNED TEXT	4.1	78	
20	HOST DB ACCESS	4.1	76	
25	SCAN TYPEWRITTEN TEXT	4.1	74	
21A	ENGLISH HOST APP. ACCESS	4.1	69	
27	STORE SCANNED TEXT PC	4.0	70	
21	HOST APP. ACCESS	3.9	62	
48	SCAN FORMS, IMAGES, TEXT	3.7	58	x
33	M.F. REPORT TO O/A SYS.	3.7	68	
32	S/R REVISABLE O/A SYS.	3.7	63	x
29	STORE TEXT ON O/A SYS. LIB.	3.7	63	
30	S/R TEXT IN REVISABLE (DCA)	3.7	59	
34	DOCUMENT INTERVENDOR TRANSP.	3.7	65	
35	KEY WORD/PHRASE SEARCH	3.7	65	
28	STORE TEXT IN M.F. LIB.	3.6	60	
49	S/R IMAGE/TEXT W/PC'S	3.6	59	x
47	COMBINE TEXT/IMAGE PC	3.5	54	
23	PC EMAIL IN COMPANY	3.5	55	

INPUT

UTILITY RATINGS RANK ORDER (continued)

Q#	FUNCTION	MEAN VALUE	PROPORTION 4/5 (%)	IND DIFF
22	CONTROL HOST JOBS	3.5	49	
17	S/R FAX W/PC	3.4	56	x
45	S/R BOOK PGS W/PC	3.3	51	x
50	STORE TEXT/IMAGE ON LAN	3.3	51	x
51	STORE TEXT/IMAGE ON MF	3.3	49	x
43	S/R DRAWINGS W/PC	3.2	48*	x
18	FAX AS W/P INPUT	3.2	48*	x
39.	STORE DRAWINGS IN PC	3.1	49*	x
40	MODIFY DRAWINGS	3.1	50*	x
41	MOVE DRAWING ON PAGE	3.1	48*	x
42	CAPTION ON DRAWING	3.1	45*	x
37	STORE LETTERHEAD	2.9	43*	
24	PC E-MAIL OUT COMPANY	2.9	33	
38	STORE SIGNATURE	2.9	31*	
44	STORE DRAWING ON M.F.	2.8	39*	x
35a	DOC TRANS. SVC.	2.8	33*	x
16	TEXT/VOICE TRANSLATE	2.8	36*	
19	FAX AS PRINTER	2.8	34*	x
18a	FAX AS GRAPHICS INPUT	2.8	36*	x
15	PC VOICE MAIL	2.8	33*	

INPUT

UTILITY RATINGS RANK ORDER (continued)

Q#	FUNCTION	MEAN VALUE	PROPORTION 4/5 (%)	IND DIFF
36	SIGNATURE STORE IN PC	2.6	33*	
51a	TEXT/IMAGE SVC.	2.5	26	x
31	S/R PC NO REVISE	2.4	21	
52	VOICE ANNOTATE	2.4	25	
46a	IMAGE SVC.	2.4	25	x
13	PC PHONE ANSWER	2.3	20	
14	PC PHONE DIALER	2.3	20	
46	NON-ENGLISH CHARACTER	2.0	18	

* INDICATES SPLIT DISTRIBUTION WHERE MIDDLE (3) IS LOW-COMPARED TO HI/LO PROPORTIONS

INPUT

FUNCTION/UTILITY COMMENTARY

- HOST RELATED FEATURES TOP THE LIST WITH STRONG SHOWING BY BOTH DB AND APPLICATIONS ACCESS. OBSERVE THAT PLAIN LANGUAGE ACCESS DOES NOT SHOW A MATERIAL ADVANTAGE OVER CONVENTIONAL METHODS. THIS MAY BE DUE TO RATING "COMPRESSION" BUT ENGLISH OR "PLAIN" LANGUAGE SHOULD NOT BE CONSIDERED A CONQUEST FUNCTION. IT IS NOT A NEGATIVE HOWEVER.

- AT THE 80% CONFIDENCE INTERVAL (BUT NOT 90%) TEXT SCANNING IS SIGNIFICANTLY MORE IMPORTANT THAN IMAGE SCANNING AT THE SPECIFIC FUNCTION/UTILITY LEVEL. THIS IS ALSO SUPPORTED BY THE RATINGS PROPORTIONS OF 74% VS 58%. SUBSEQUENTLY WE WILL SEE OVERALL CONCEPT EVALUATIONS WHICH SUPPORT THIS.

- THERE IS A TENDENCY TO PREFER PC STORAGE OF TEXT OVER O/A AND MAINFRAME STORAGE DESPITE THE VERY HIGH INTEREST IN MAINFRAME ACCESS. THIS IS SIGNIFICANT AT THE 80% INTERVAL.

- COMBINED TEXT/IMAGE PC CAPABILITY IS MATERIALLY LESS POWERFUL IN ITS UTILITY BUT STILL STRONG WITH ABOUT HALF THE REPONDENTS (AS COMPARED TO TEXT).

- KEYWORD SEARCH OF DOCUMENTS IS ATTRACTIVE TO 65% OF USER RESPONDENTS AND IS RELATIVELY POWERFUL, AS IS THE ABILITY TO COMMUNICATE WITH O/A SYSTEMS FROM PC'S AND MAINFRAMES. THIS IS ALSO CONSISTENT WITH STRONG RATING OF INTERVENDOR TRANSPARENCY (3.7).

- THE ABILITY TO MANIPULATE AND MODIFY DRAWINGS IS SIGNIFICANTLY (90% INTERVAL) LESS IMPORTANT THAN THE ABILITY TO SCAN FORMS. THESE ITEMS BRING OUT STRONG DIVERGENCE OF OPINION IN RESPONDENTS.

- THE ABILITY TO USE FAX AS WORD PROCESSING INPUT IS ALSO "CONTROVERSIAL," APPEALING STRONGLY TO HALF THE RESPONDENTS AND BEING RATED POORLY BY A LARGE PROPORTION.

- TI "DEMO" FUNCTIONS SUCH AS THE ABILITY TO CAPTURE LETTERHEAD AND SIGNATURES DO NOT PERFORM VERY WELL, ESPECIALLY AS COMPARED TO THE ABILITY TO STORE FORMS. WHILE LETTERHEAD (2.9, 43%) IS BETTER THAN SIGNATURE (2.9, 31%), BOTH ARE ECLIPSED BY FORMS (3.7, 58%). DEMONSTRATION CHANGE IS STRONGLY RECOMMENDED.

- THE RELATIVELY LOW RATING (2.8, 39%) FOR MAINFRAME DRAWING STORAGE SUGGESTS THAT THIS EXPENSIVE DEVELOPMENT CAN BE POSTPONED FOR THE PRESENT. TEXT M.F. STORAGE IS SIGNIFICANTLY MORE APPEALING (3.6, 60%).

- THIRD PARTY SERVICES ARE WEAKLY RECEIVED WITH TEXT DOCUMENT TRANSLATION THE STRONGEST PERFORMER AT 2.8 and 33%. TEXT/IMAGE SERVICE RECEIVES A UTILITY RATING OF 2.5 AND 26%, ABOUT THE SAME AS IMAGE SERVICE 2.4 AND 25%. THESE DATA SUGGEST THAT A "SERVICE BUREAU" APPROACH SHOULD NOT BE THE FIRST CHOICE OF DISTRIBUTION CHANNELS.

- DOCUMENT TRANSLATION RECEIVES A "5" FROM 20% OF RESPONDENTS, IMAGE SERVICE RATING 5 BY 14% AND TEXT/IMAGE ARE 5-RATED BY 11%. IN INPUT'S OPINION THESE LAST TWO RATINGS PRECLUDE THE POSSIBILITY OF A SUCCESSFUL SERVICE, PARTICULARLY IN LIGHT OF THE REQUISITE SOFTWARE DEVELOPMENT. THE 20% RATING "5" FOR DOCUMENT TRANSLATION IS SOMEWHAT MORE EQUIVOCAL BUT BY NO MEANS DOES THIS INDICATE STRONG DEMAND.

- ALTERNATIVE USES OF FAX MACHINES AND PC VOICE MAIL ARE ESSENTIALLY CONTRA-INDICATED FOR IMMEDIATE DEVELOPMENT AND/OR OFFERING AND EXHIBIT CONSIDERABLE OPINION SPLIT ON THE UTILITY DIMENSION.

- DOCUMENT COMMUNICATIONS WITHOUT REVISABILITY ARE OF EXTREMELY LIMITED UTILITY WITH A RATING OF 2.4.

- AUTOMATED PHONE CAPABILITIES AND VOICE ANNOTATION OF MESSAGES ARE AMONG THE BOTTOM RATERS WITH ONLY LIMITED APPEAL IN THE GENERAL SAMPLE.

INDUSTRY DIFFERENCES

- OF THE 45 FUNCTIONS TESTED FOR UTILITY, 17 OR 38% SHOWED SIGNIFICANT VARIATION BY INDUSTRY. IN ALL CASES OF INDUSTRY VARIATION FOUND MANUFACTURING RESPONDENTS WERE SEEN TO BE MORE POSITIVE THAN BANKING OR INSURANCE. THIS COMPARISON WAS RUN FROM LOWEST MEAN UTILITY WITHIN A FUNCTION TO THE HIGHEST.

FUNCTION UTILITY DIFFERENCES

Q#	FUNCTION	MFG RATING	B OR I LOW RATING	DIFF
48	SCAN FORMS, IMAGES, TEXT	4.0	3.4 B	0.6
32	S/R REVISABLE O/A SYS	4.0	3.4 I	0.6
49	S/R IMAGE/TEXT W/PC'S	4.0	3.2 B	0.8
17	S/R FAX W/PC	3.7	3.0 I	0.7
45	S/R BOOK PAGES W/PC	3.9	2.7 I	1.2
50	STORE TEXT/IMAGE ON LAN	3.9	2.9 B	1.0
51	STORE TEXT/IMAGE ON M.F.	3.6	2.9 I	0.7
43	S/R DRAWINGS W/PC	3.8	2.8 B	1.0
18	FAX AS W.P. INPUT	3.7	2.8 I	0.9

FUNCTION UTILITY DIFFERENCES (continued)

Q#	FUNCTION	MFG RATING	B.D.R.I LOW RATING	DIFF
39	STORE DRAWINGS IN PC	3.8	2.7 I	1.1
40	MODIFY DRAWINGS	3.8	2.8 I	1.0
41	MOVE DRAWING ON PAGE	3.8	2.6 B	1.2
42	CAPTION ON DRAWING	3.7	2.7 B	1.0
19	FAX AS PRINTER	3.3	2.5 I	0.8
18a	FAX AS GRAPHICS INPUT	3.3	2.3 B	1.0
51a	TEXT/IMAGE SERVICE	2.9	2.1 I	0.8
46a	IMAGE SERVICE	2.8	2.0 B	0.8

- THIS DATA SUGGESTS STRONGLY THAT A MANUFACTURING INDUSTRY EMPHASIS IN WARRANTED. KEY FEATURES IN COMMUNICATIONS, STORAGE, DRAWING HANDLING, FAX AND SERVICE ARE ALL BETTER-RECEIVED.

GTE UTILITY RATINGS

- WITH CERTAIN UNCOMMON EXCEPTIONS, THE UTILITY RATINGS OF GTE RESPONDENTS WERE INSIGNIFICANTLY DIFFERENT FROM THE MEAN RATINGS OF THE MAIN GROUP, THE EXCEPTIONS ARE AS FOLLOWS:

Q#	FUNCTION	MAIN RATE	% 4/5	GTE RATE	% 4/5
13	AUTO PHONE ANSWER	2.3	20	3.0	50
23	IN-CO. E- MAIL	3.5	55	4.3	75
31	S/R NO REVISE	2.4	22	3.2	45

- THESE DIFFERENCES ARE SIGNIFICANT AT THE 90% LEVEL. THEY APPEAR TO INDICATE A STRONGER UNDERLYING NEED FOR SUPPORT IN VARIOUS COMMUNICATIONS DIMENSIONS THAN THE GROUP AS A WHOLE.

- WHILE THE GTE GROUP IS HIGHLY SIMILAR TO THE WHOLE IN OTHER REGARDS, IT IS WORTH NOTING THAT GTE USERS ARE OTHERWISE MORE LIKE THE FINANCIAL (SERVICE) RESPONDENTS SINCE THEY DO NOT SHARE MANUFACTURING'S HIGH ENTHUSIASM FOR THE "DRAWING" FUNCTIONS.

- THE UNUSUAL BI-MODAL RESPONSE CHARACTERISTIC IS PRESENT ON ITEMS 13 & 31. AS MENTIONED EARLIER, CERTAIN FLAMINGO FUNCTIONS PRECIPITATE STRONG OPINION FROM RESPONDENTS.

- WITH THE EXCEPTIONS NOTED, GTE USER UTILITIES ARE NOT MATERIALLY DIFFERENT FROM THE MAIN GROUP.

INPUT

TI UTILITY RATINGS

Q #	FUNCTION	MAIN RATING	% 4/5	TI RATING	% 4/5
17	S.R FAX W/PC	3.4	56	4.1	70
18a	FAX AS GRAPHICS INPUT	2.7	36	4.2	75
19	FAX AS PRINTER	2.8	34	4.0	60
20a	ENGLISH HOST DB ACCESS	4.2	76	3.6*	60
21a	ENGLISH HOST APP. ACCESS	4.1	63	3.3*	30
23	PC E-MAIL IN COMPANY	3.5	55	4.5	90
36	SIGNATURE STORE IN PC	2.6	33	3.5	55
39	STORE DRAWINGS IN PC	3.1	49	3.9	65
40	MODIFY DRAWINGS	3.1	50	4.0	75
42	CAPTION ON DRAWING	3.1	45	4.0	80
43	S/R DRAWINGS W/PC	3.2	48	4.3	70
44	STORE DRAWING ON M.F.	2.8	39	3.9	65
46	NON-ENGLISH CHARACTER	2.0	18	2.9	30
47	COMBINE TEXT/IMAGE PC	3.5	54	4.4	80
48	SCAN FORMS, IMAGES, TEXT	3.7	58	4.5	85
49	S/R IMAGE/TEXT W/PC'S	3.6	59	4.6	90
50	STORE TEXT/IMAGE ON LAN	3.3	51	4.2	75
51	STORE TEXT/IMAGE ON MF	3.3	49	4.1	70
	MEAN % 4/5		48.5%		68.1%

* INDICATES LOWER RATING THAN MAIN GROUP

INPUT

TI UTILITY RATINGS COMMENT

- TI RESPONDENTS DIFFER SHARPLY FROM THE MAIN GROUP AND GTE IN THEIR UTILITY RATINGS. 18 (40%) RATINGS WERE DIFFERENT WITH ALL BUT TWO IN A POSITIVE DIRECTION.

- THESE DIFFERENCES (IF REAL AND NOT THE RESULT OF RESPONDENT SELECTION) ARE OF SUBSTANTIAL IMPORTANCE TO GTE PLANNERS AND PRODUCT DESIGNERS. BASICALLY, THEY RAISE A QUESTION AS TO THE REPRESENTATIVENESS OF THE TI UTILITY PROFILE. TI APPEARS TO BE A "SPECIAL" OR "UNUSUAL" COMPANY WITH RESPECT TO PC USER NEEDS. THIS IMPLIES A NEED FOR GREAT CAUTION IN ACCEPTING PRODUCT CONCEPTS OR DEVELOPMENTS WHICH GREW FROM INTERNAL NEEDS. SUCH CONCEPTS SHOULD BE TESTED THOROUGHLY OUTSIDE TI IF AT ALL POSSIBLE.

- MAJOR AREAS OF POSITIVE VARIATION ARE IN FAX CAPABILITY, E-MAIL, SIGNED DOCUMENTS, DRAWING CAPABILITY, MAIN-FRAME AND LAN STORAGE AND COMBINATION TEXT/IMAGE CAPABILITY. INTERESTINGLY, TI USERS ARE RELATIVE REJECTORS OF PLAIN LANGUAGE ACCESS.

- IN ALL ITEMS SAVE PLAIN LANGUAGE ACCESS THE TI GROUP TENDS TO GIVE MORE POSITIVE RATINGS. HAVE THESE R'S BEEN PRE-SOLD OR PRE-SELECTED IN SOME WAY?

INPUT

CONCEPT RATINGS

- IN ADDITION TO UTILITY RATINGS OF SPECIFIC FUNCTIONS, RESPONDENT'S WERE ASKED TO RATE THE CONCEPTS ON AN OVERALL BASIS WITH RESPECT TO HOW "IMPORTANT" REGULAR USE OF A CLASS OF CAPABILITIES WOULD BE IN THEIR JOB. THE CLASSES RATED WERE PHONE CAPABILITY, IMAGE CAPABILITY, TEXT SCANNING AND COMBINED IMAGE/TEXT CAPABILITY. "ONE" IS UNIMPORTANT: FIVE IS "VERY IMPORTANT."

CLASS	MAIN NOW	MAIN 3 YRS	% 4/5 NOW	% 4/5 3 YRS	DIFF
PHONE	2.9	3.5*	33	55	+22
IMAGE	3.0	3.5*	34	51	+17
TEXT	3.7	4.1	57	72	+15
IMAGE/TEXT	3.3	3.9*	39	66	+27

- NOTE THE MOST RAPID INCREASES OCCUR IN THE IMAGE/TEXT GROUPING WHERE 66% RATE THE CONCEPT AS 4/5. IN THE "VERY IMPORTANT" (5) RATING THE PROPORTION ALMOST DOUBLES FROM 16% TO 30%.

- FOR TEXT, SUBSTANTIAL IMPORTANCE IS ALREADY PLACED ON THIS FUNCTION AND IT CONTINUES TO GROW TO 72%. FOR 5 RATERS THE PROPORTION INCREASES FROM 36% TO 45%. THIS SUGGESTS THAT TEXT SCANNING WILL BE SOMEWHAT MORE IMPORTANT THAN IMAGE/TEXT TO SOME USERS IN THE FUTURE.

- IMAGE ALONE DOES NOT FARE AS WELL, SUGGESTING ANY DEVICES OFFERED SHOULD COMBINE FUNCTIONS OR OFFER TEXT ALONE. IMAGE ONLY 5 RATINGS ARE SLACK, INCREASING FROM 22% TO 30%, A RELATIVELY SLOW GROWTH RATE.

- PHONE AS A CONCEPT FARES BETTER THAN THE PHONE SPECIFICS TESTED. THIS MAY SUGGEST UNADDRESSED NEEDS IN THIS AREA. 5 RATERS MOVE FROM 18% TO 29% OVER THREE YEARS, A RELATIVELY STRONG PERFORMANCE.

INPUT

INDUSTRY CONCEPT RATINGS

- AS IN SPECIFIC FUNCTIONS, MANUFACTURING RESPONDENTS TEND TO RESPOND MORE FAVORABLY. THIS WOULD BE EXPECTED.

	MFG		OTHER	
CLASS	NOW	3 YEARS	NOW	3 YRS
PHONE	3.1	3.7	2.6	3.2 (I)
IMAGE	3.5	3.9	2.7	3.3 (I)
TEXT	3.7	4.1	NSD	NSD
IMAGE/TEXT	3.6	4.0	2.9 (B)	NSD

- NOTE THAT THE RATINGS OF TEXT ARE NOT SIGNIFICANTLY DIFFERENT FOR TEXT. WHILE A CURRENT DIFFERENCE EXISTS FOR IMAGE/TEXT IT DISAPPEARS IN THE FUTURE.

- WHEN DIFFERENCES EXIST, IT IS USUALLY WITH RESPECT TO THE INSURANCE SEGMENT. BANKING IS TYPICALLY "MID-POINT" ON CONCEPT RATINGS.

- CONCEPT DATA SUGGESTS THAT THE TEXT DEMAND IS MORE OF A PRESENT NEED WHILE TEXT/IMAGE WILL GROW TO EQUIVALENT STRENGTH IN THE FUTURE.

GTE CONCEPT RATINGS

	GTE		MAIN	
CLASS	NOW	3 YRS	NOW	3 YRS
PHONE	3.8*	4.2	2.9	3.5
IMAGE	3.2	4.0	3.0	3.5
TEXT	3.7	4.0	3.7	4.1
IMAGE/TEXT	3.9*	4.1	3.3	3.9

- CURRENT CONCEPT IMPORTANCE AT PRESENT IS SIGNIFICANTLY GREATER AT GTE THAN IN THE MAIN SAMPLE. THESE DIFFERENCES MODERATE WITH TIME SINCE GTE R'S DO NOT POSIT INCREASING IMPORTANCE FOR THE TWO CONCEPTS WHERE THIS OCCURS: PHONE AND IMAGE/TEXT.

- A CAUTIONARY NOTE TO PLANNERS AND DESIGNERS IS IN ORDER: GTE R'S SHOW GREATER GENERAL (CONCEPT) ENTHUSIASM THAN SPECIFIC (FUNCTION) ENTHUSIASM. THIS SUGGESTS THAT WHILE INITIAL CONTACTS WITH POTENTIAL USERS MAY BE EXTREMELY POSITIVE, THE INITIAL POSITIVE REACTION MAY BE MODULATED WHEN CONFRONTED WITH OPERATIONAL SPECIFICS.

* SIGNIFICANT AT 90%.

INPUT

TI CONCEPT RATINGS

- ON CONCEPT RATINGS THERE WERE NO STATISTICALLY SIGNIFICANT DIFFERENCES BETWEEN TI AND THE MAIN GROUP. COMBINATION IMAGE/TEXT SHOWED THE GREATEST VARIATION (ABOUT 0.5% PTS.) BUT DID NOT ACHIEVE STATISTICAL SIGNIFICANCE. A MODERATE TENDENCY TO RATE HIGHER WAS ALSO PRESENT IN THE CONCEPT TESTING AS IN FUNCTION TESTING. SINCE DIFFERENCES ARE NOT MATERIAL, DATA IS NOT PRESENTED.

INPUT

PRICE EVALUATIONS, MAIN GROUP

- THREE PRICE POINTS WERE TESTED FOR "THE COMPLETE RANGE OF VOICE, IMAGE AND TEXT" CAPABILITIES. ON THIS SCALE ONE WAS "NOT VERY INTERESTED AND FIVE WAS "VERY INTERESTED." FOR THE MAIN GROUP RESULTS WERE AS FOLLOWS:

RATING %

PRICE	1	2	3	4	5	4/5
$6000	22	24	22	13	19	32%
$4000	16	13	26	19	26	45%
$2000	10	9	14	23	44	67%

- OBSERVE THAT SHIFTS ARE IN THE APPROPRIATE DIRECTION. AT $2000 2 OUT OF 3 R'S RATE FLAMINGO AT 4 OR 5.

- AT $6000 ONE IN FIVE R'S REPORTS THAT HE/SHE IS VERY INTERESTED. AT $2000 THIS RISES TO ONE IN 2⅓.

- BY MULTIPLYING THE PROPORTIONS BY THE PRICE POINT WE MAY EVALUATE THE PRICE/ELASTICITY OF FLAMINGO:

INPUT

PRICE	4/5	PRODUCT
$ 6000	32	1920
$ 4000	45	1800
$ 2000	67	1340

- AS THE COLUMN LABELLED PRODUCT SHOWS, PRICE FALLS FASTER THAN INTEREST AT THE 4/5 LEVEL RISES. THIS INDICATES THAT TOTAL DOLLAR VOLUME WILL FALL AT THE LOWER PRICE POINTS DESPITE INCREASED UNIT SALES. THE SAME IS TRUE FOR 5 RATERS ALONE, 4/5 RATERS AND 3/4/5 RATERS AS GROUPS.

- ACCORDINGLY, THE EVIDENCE SUGGESTS THAT THERE IS NO ADVANTAGE IN PRICING FLAMINGO BELOW $6000 FROM A TOTAL REVENUE PERSPECTIVE. IF, HOWEVER, PRODUCTION AND SALES COSTS FALL VERY RAPIDLY NET PROFIT PER UNIT SOLD MIGHT BE GREATER AT HIGHER VOLUMES. THIS SCENARIO IS CONSIDERED UNLIKELY BUT IS POSSIBLE.

INPUT

PRICE EVALUATIONS, GTE & TI

GTE PRICE RATINGS %

PRICE	1	2	3	4	5	4/5	PRODUCT
$6000	36	6	29	12	17	29%	1740
$4000	17	13	13	19	38	57%	2280
$2000	0	12	13	25	50	75%	1500

TI PRICE RATINGS %

PRICE	1	2	3	4	5	4/5	PRODUCT
$6000	17	11	22	17	33	50	3000
$4000	10	11	11	26	42	68	2720
$2000	5	0	11	5	79	84	1680

- ONCE AGAIN TI RESPONDENTS DISPLAY THEIR MASSIVE ENTHUSIASM BUT RESULTS CONTRAINDICATE A LOW PRICE BASED ON TOTAL REVENUE.

- GTE INTERVIEWEES DO DISPLAY LIMITED CLASSICAL PRICE ELASTICITY. AS THE FLAMINGO PRICES DROP TO $4000 VOLUME PICKS UP MORE RAPIDLY AND A LARGER TOTAL MARKET WOULD EXIST. BY $2K THE TOTAL MARKET IS LESS THAN AT $6K ALTHOUGH VOLUME WOULD BE 2.6 TIMES GREATER.

INPUT

MIS SOFTWARE & COMMUNICATIONS

TYPE	% NOW	% 3 YEARS
MVS	98	95
VM	60	60
DOS/VSE	30	20
TSO	88	75
IMS	68	65
CICS	95	90
DB2/SQL	30	40
PROFS	40	35
DISSOSS	35	45
APPC (LU 6.2)	20	40
3RD PTY. DBMS	63	58
3RD PTY LINK SOFTWARE	45	53
SNA	90	90
BISYNC	90	78
ASYNC	85	80
PUBLIC X.25	53	58
PVT X.25	38	40
PVT EARTH STATIONS	18	25

INPUT

- BY AND LARGE, SYSTEMS SOFTWARE WILL BE STABLE DURING THE NEXT THREE YEARS. MODERATE MIGRATION OUT OF TSO AND DOS/VSE SHOULD NOT INFLUENCE FLAMINGO.

- APPC WILL GROW RAPIDLY BUT WILL STILL BE AT A MINORITY OF SHOPS.

- IN COMMUNICATIONS SOME BISYNC ATTRITION WILL BE SEEN BUT THIS SHOULD HAVE NO EFFECT. NOTE THAT PACKET IS NOT EXPECTED TO GROW STRONGLY. SOME EARTH STATION INCREASE SEEN BUT THIS IS MODERATE.

- A REMARKABLY LARGE (45%) OF R'S INDICATED THE EXISTENCE OF SOME TYPE SOFTWARE FOR LINKING IBM AND NON-IBM SYSTEMS. PRESUMABLY, THESE ARE PACKAGES FROM DEC, WANG, PRIME, ETC. NOT MUCH GROWTH IS EXPECTED IN THIS ARENA BUT THIS DOES NOT SEEM TO DO GREAT DAMAGE TO FLAMINGO SOFTWARE IF THE PRICE IS RIGHT. THIS AREA NEEDS FURTHER INVESTIGATION.

- OVERALL, THE STABLE SYSTEMS AND COMMUNICATIONS ENVIRONMENT SHOULD EASE FLAMINGO DEVELOPMENT.

INPUT

PC MODES NOW AND FUTURE (MIS)

	% NOW	# PC'S	% 3 YRS	# PC'S	AAGR %
LAN, NO HOST	13	28.0	5	21.3	(8.7)
LAN TO HOST	5	10.7	21	89.2	102.8
PC VIA CONTROLLER (HOST)	22	47.3	39	165.7	51.9
PC TO MINI	10	21.5	13	55.3	37.0
STANDALONE	50	107.5	22	93.5	(4.5)
	100	215.0K	100	425.0K	25.5

- OBSERVE THE STRONG OVERALL GROWTH OF PC'S IN THESE FIRMS. IT IS AT LEAST TWICE THE OVERALL PC MARKET GROWTH.

- SECOND, NOTE THE STRONG TREND TOWARD CONNECTIVITY. THE ACTUAL NUMBER OF UNCONNECTED PC'S WILL SHRINK SLIGHTLY AND THE PROPROTION WILL FALL FROM ONE HALF TO ONE FOURTH UNCONNECTED.

INPUT

- THE GROWTH "HOT SPOT" IS LAN CONNECTED TO HOST. FLAMINGO STRATEGY SHOULD TAKE THIS INTO ACCOUNT AS THE INCREASED LOCAL CONNECTION IMPLIES A BETTER OPPORTUNITY TO SHARE FLAMINGO STATIONS. THIS MIGHT REDUCE STATION UNIT SALES OR IT MIGHT PROVIDE AN EXCELLENT ENTRY POINT. MOST LIKELY EFFECT IS UNCLEAR BUT HOST INTERCONNECTION IMPLIES MIS INVOLVEMENT IN CONFIGURATION SELECTION.

- ALL THIS DATA SUGGEST INCREASING INTEGRATION OF PC'S WHICH IMPLIES A GREATER ROLE FOR MIS AND LESS USER INDEPENDENCE IN GENERAL. SALES AND CHANNEL STRATEGIES SHOULD TAKE THIS INTO ACCOUNT. IN THE FUTURE MIS WILL BECOME INCREASINGLY DIFFICULT TO END-RUN ON PC ITEMS.

INPUT

MIS UTILITY RATINGS RANK ORDER

Q #	FUNCTION	MEAN VALUE	PROPORTION 4/5 %
36	HOST DB ACCESS	4.4	85
36a	ENGLISH HOST DB ACCESS	4.4	80
42	EDIT SCANNED TEXT	4.3	85
41	SCAN TYPEWRITTEN TEXT	4.2	83
43	STORE SCANNED TEXT PC	4.2	83
37	HOST APP. ACCESS	4.2	80
37a	ENGLISH HOST APP. ACCESS	4.2	78
66	SCAN FORMS, IMAGES, TEXT	4.0	75
50	M.F. REPORT TO O/A SYS.	3.9	70
39	PC E-MAIL IN COMPANY	3.9	70
49	S/R REVISABLE O/A SYS	3.9	70
46	STORE TEXT ON O/A SYS. LIB.	3.9	65
57	MODIFY DRAWINGS	3.8	73
59	CAPTION ON DRAWING	3.8	70
58	MOVE DRAWING ON PAGE	3.8	70
47	S/R TEXT IN REVISABLE (DCA)	3.8	70
65	COMBINE TEXT/IMAGE PC	3.8	68
67	S/R IMAGE/TEXT W/PC'S	3.8	68
69	STORE TEXT/IMAGE ON M.F.	3.8	63

INPUT

MIS UTILITY RATINGS RANK ORDER (continued)

Q #	FUNCTION	MEAN VALUE	PROPORTION 4/5 %
45	STORE TEXT IN M.F. LIB.	3.8	63
52	KEY WORD/PHRASE SEARCH	3.7	68
68	STORE TEXT/IMAGE ON LAN	3.6	68
51	DOCUMENT INTERVENDOR TRANSP.	3.6	65
60	S/R DRAWINGS W/PC	3.6	65
56	STORE DRAWING IN PC	3.6	
61	STORE DRAWING ON M.F.	3.6	63
34	FAX AS W/P INPUT	3.6	60
40	PC E-MAIL OUT COMPANY	3.4	60
38	CONTROL HOST JOBS	3.3	53
33	S/R FAX W/PC	3.2	45
34a	FAX AS GRAPHICS INPUT	3.1	43
32	TEXT/VOICE TRANSLATE	3.1	43
31	PC VOICE MAIL	3.1	38
62	S/R BOOK PGS W/PC	3.1	35
54	STORE LETTERHEAD	3.0	43
55	SIGNATURE & LETTERHEAD	3.0	43
53	SIGNATURE STORE IN PC	2.8	35
30	PC PHONE DIALER	2.7	25
35	FAX AS PRINTER	2.6	30

INPUT

MIS UTILITY RATINGS RANK ORDER (continued)

Q #	FUNCTION	MEAN VALUE	PROPORTION 4/5 %
48	S/R PC NO REVISE	2.6	28
52a	DOC TRANS. SVC.	2.4	23
71	VOICE ANNOTATE	2.4	23
29	PC PHONE ANSWER	2.4	15
63a	IMAGE SVC.	2.3	20
63	NON-ENGLISH CHARACTER	2.3	20
69a	TEXT/IMAGE SVC.	2.3	10

MIS UTILITY RATING COMMENT

- RATINGS OF MIS ARE REMARKABLY CONSONANT WITH THOSE OF USERS FOR THE VAST MAJORITY OF FUNCTIONS RATED. WHILE PERHAPS SOMEWHAT SURPRISING TO THE MORE CYNICAL OBSERVER, THIS IS A POSITIVE FOR FLAMINGO. USERS AND MIS PERSONNEL ARE IN FUNCTIONAL AGREEMENT ON WHAT IS NEEDED AT THE STATION, THE LAN AND CENTRAL SITE WITH FEW EXCEPTIONS.

- MATERIAL DEVIATIONS ARE AS FOLLOWS:

FUNCTION	USER	% 4/5	MIS	% 4/5
MODIFY DRAWINGS	3.1	50	3.8	73
CAPTION ON DRAWINGS	3.1	45	3.8	70
MOVE DRAWING ON PAGE	3.1	48	3.8	70
STORE TEXT/IMAGE ON M.F.	3.3	49	3.8	63
PC E-MAIL OUTSIDE	2.9	33	3.4	60

- CONSIDERING THAT 45 FUNCTIONS WERE RATED THE APPERANCE OF SIGNIFICANT VARIATION ON 11% REPRESENTS REMARKABLE AGREEMENT.

INPUT

- OBSERVE THAT THREE FUNCTIONS ARE ALL RELATED TO DRAWING CAPABILITIES. INCREASED EMPHASIS ON TEXT/IMAGE STORAGE ON THE MAINFRAME IS A MATTER OF NATURAL EMPHASIS. TO SOME EXTENT, THE STRONG MIS RATINGS FOR THE FIRST FOUR CAPABILITIES IS UNFORTUNATE SINCE THEY EMPHASIZE FLAMINGO AREAS IN NEED OF DEVELOPMENT.

INPUT

MIS CONCEPT RATINGS

- FOR CONCEPTS, MIS RESPONDENTS WERE QUERIED ON A SERIES PARALLEL TO THE USERS.

	NOW	3 YRS	% 4/5 NOW	% 4/5 3 YRS	DIFF.
PHONE	3.0	3.5	43	60	+17
IMAGE	3.3	3.8	40	63	+23
TEXT	3.7	4.0	50	70	+20
IMAGE/TEXT	3.4	3.8	45	63	+18

- THIS DATA DOES NOT SHOW SIGNIFICANT INDUSTRY VARIATION ON IMPORTANCE AS DOES THE USER DATA. IN ADDITION THE RATINGS CHANGES DO NOT ACHIEVE STATISTICAL SIGNIFICANCE AT THE 90% INTERVAL.

- DIRECTIONAL CHANGES ARE, HOWEVER, IN THE OPTIMUM DIRECTION BUT AT MODERATELY LOWER VELOCITY THAN THE USER SAMPLE FROM A RATINGS STANDPOINT.

- ENCOURAGING IS THE FACT THAT MIS IS NOT LESS AMENABLE TO THE CONCEPTS THAN THE USERS.

- THE CONCEPT DATA FOR MIS INDICATES APPROXIMATELY THE SAME "STATE OF READINESS" AND RECOGNITION OF IMPORTANCE AS DOES THE USER DATA. THERE IS NO MAJOR DIFFERENCE AT THE CONCEPTUAL LEVEL.

INPUT

PRICE EVALUATION (STATION)

- PRICE POINTS WERE TESTED IN A FASHION PARALLEL TO USERS. GROUP RESULTS ARE AS FOLLOWS:

	RATING %						
PRICE	1	2	3	4	5	4/5	USER 4/5
$6000	42	26	16	8	8	16	32
$4000	26	37	13	16	8	24	45
$2000	10	21	23	26	20	46	67

- ONCE AGAIN OBSERVE THAT SHIFTS ARE IN THE APPROPRIATE DIRECTION BUT THAT HIGH INTEREST (% 4/5) IS LOWER BY SUBSTANTIAL AMOUNTS AMONG MIS R'S.

- AT $6000 ONLY 1 IN 13 R'S REPORTS HIGH (5) INTEREST. AT $4K THIS REMAINS THE SAME. AT $2K THIS RISES SHARPLY TO 1 IN 5.

- PRICE ELASTICITY HAS A DIFFERENT SHAPE FOR MIS THAN FOR USERS:

PRICE	4/5	PRODUCT
$6000	16	960
$4000	24	960
$2000	46	920

- PRODUCT IS ESSENTIALLY FLAT INDICATING THAT THE TOTAL MARKET DOLLARS WOULD NOT INCREASE WITH REDUCED PRICES.

INPUT

PRICE EVALUATION (STATION)

- ADDITIONALLY, MIS R'S WERE ASKED WHAT PROPORTION OF THEIR PC POPULATIONS COULD BE JUSTIFIED FOR INSTALLATION AT THE PRICE POINTS:

PRICE	MEAN PROPROTION JUSTIFIED		90% INTERVAL
$6000	1260	21%	12-31
$4000	1080	27%	18-36
$2000	820	41%	31-50

- THE CLOSENESS OF THESE MEAN PROPORTIONS TO THE % 4/5 DATA IS ENCOURAGING.

- BASICALLY, 1 IN 5 PC'S AT THESE SITES COULD BE JUSTIFIED FOR INSTALLATION. THIS MAY BE AS HIGH AS ALMOST 1 IN 3 OR AS LOW AS 1 IN 8. AS A TYPICAL CASE, THIS WOULD SUGGEST STATIONS WITH ABOUT THE SAME PENETRATION AS CURRENTLY EXPERIENCED BY LASER PRINTERS AMONG USERS WITH FLAMINGO AT $6K.

- OVERALL, THIS DATA INDICATES THAT SUBSTANTIAL VOLUMES MAY BE ACHIEVED IN FLAMINGO STATIONS BUT THAT MIS R'S ARE LESS ACCEPTING OF FLAMINGO STATIONS THAN ARE USERS BY A CONSIDERABLE MARGIN.

INPUT

MIS PRICE EVALUATION (MAINFRAME COMPONENT)

- MISR'S WERE QUERIED ON THEIR INTEREST IN ACQUIRING SOFTWARE TO ACCOMPLISH THE TRANSLATION, SWITCHING AND STORAGE FUNCTIONS FOR TEXT AND IMAGE AT VARIOUS PRICE POINTS. INSTALLATION AND ONE YEAR OF MAINTENANCE WAS STATED TO BE A PART OF THE PRICE. MIS RESPONDENT RESULTS WERE:

	RATING %						
	1	2	3	4	5	4/5	STA. 4/5
$125K	53	15	24	3	5	8	6K = 16
100K	44	21	21	6	8	14	4K = 24
75K	32	21	21	15	11	26	2K = 46
50K	17	20	17	28	18	46	

- OBSERVE THE VERY LOW INTEREST AT THE HIGHER PRICE POINTS. BELOW $100K THE SITUATION IMPROVES MARKEDLY.

INPUT

- INTERESTINGLY, THE OUTLOOK FOR SELLING MORE COPIES NOT ONLY IMPROVES AS THE PRICE DROPS BUT THE TOTAL REVENUE ALSO INCREASES ON A "PRODUCT" BASIS:

PRICE	% 4/5	PRODUCT	% CHANGE	PROJECTED COMPANIES	REV.
125K	8	10.0		20	$ 2.5M
100K	14	14.0	40	35	3.5M
75K	26	19.5	39	65	4.9M
50K	46	23.0	18	115	5.8M

- THIS DATA INDICATES REVENUE "SLOPES OFF" BELOW 75K. IF REVENUE MAXIMIZATION WERE THE STRATEGY A PRICE BETWEEN $75 AND 100K WOULD BE BEST.

- "PROJECTED COMPANIES" INDICATES THE EXPECTED NUMBER OF FIRMS IN THE UNIVERSE OF "250 LARGEST MFGS, BANKS AND INSURERS" THAT WOULD EXPRESS HIGH INTEREST AT A SPECIFIC PRICE POINT ON THE SOFTWARE. AS CAN BE SEEN, A LARGE MARKET OPENS AT THE LOWER PRICE POINTS IN COMPANIES AND REVENUE POTENTIAL.

- IT IS POSSIBLE THAT MARKET WOULD BE LARGER DUE TO THE NEED FOR MULTIPLE INSTALLATIONS. REVENUE IN THIS CASE WOULD DEPEND ON LICENSE TYPE GRANTED FOR SOFTWARE.

INPUT

A DIVERGENCE TO MARKET STRATEGY

- AS CAN BEEN SEEN THE MARKET FOR MAINFRAME SOFTWARE IS RELATIVELY SMALL IN DOLLAR VOLUME. THE MAIN "ACTION" APPEARS TO BE IN THE PROVISION OF WORK STATIONS.

- CONSIDER THAT THE MEAN INSTALLED NUMBER OF PC'S WAS 859 UNITS PER COMPANY AT PRESENT. RESPONDENTS STATED THAT AT $6K PER STATION 21% OF PC'S WOULD BE JUSTIFIED FOR INSTALLATION ON AVERAGE. THIS EQUATES TO 180 PC'S/ COMPANY OR AN EXPENDITURE PER COMPANY OF $1.08 M.

- IF WE ASSUME "COUPLING" OF STATION AND SOFTWARE FUNCTIONS AT THE MIS FUNCTION (I.E. NO STATION SALES WITHOUT SOFTWARE) THEN THE TOTAL SALES POTENTIAL OF THE "SYSTEM" AT VARIOUS SOFTWARE PRICE POINTS WOULD BE:

SOFTWARE PRICE	STATION PRICE	STATIONS	POTENTIAL COMPANIES	TOTAL VALUE	% SW
$ 125K	6K	180	20	$ 24.1M	10.4
100	6K	180	35	41.3M	8.5
75	6K	180	65	75.1M	6.5
50	6K	180	115	130.0M	4.5

INPUT

- AS THIS EXHIBIT DEMONSTRATES, SOFTWARE IS NOT A MATERIAL PORTION OF THE TOTAL REVENUE POTENTIAL BUT MAY BE AN INHIBITOR TO "SYSTEM" SALES. UNDER THE ASSUMPTIONS OF THIS ANALYSIS IT MAY BE APPROPRIATE TO PROVIDE SOFTWARE INEXPENSIVELY TO WIDEN THE MIS PROSPECT BASE FOR STATION SALES. THIS, HOWEVER, IMPLIES A VERY HEAVY RELIANCE ON TI AS A SUPPLIER.

- NOTE: CONCEPTUALLY, "COUPLING" APPEARS ONE WAY (STATION PLUS SOFTWARE OR STATION ALONE BUT NOT SOFTWARE ALONE) DUE TO REVENUE EFFECTS.

INPUT

INFLUENCE OF IBM SOFTWARE

- RESPONDENTS WERE QUERIED ON THE NECESSITY OF HAVING CERTAIN IBM SOFTWARE REQUIRED TO MAKE USE OF THE CAPABILITIES. DATA IS AS FOLLOWS:

INTEREST	RATING	% 4/5
50K	3.1	46
CICS	3.3	47
DISSOSS	2.1	15
CICS & DISSOS	1.9	15

- AS THE % COLUMN IN PARTICULAR SHOWS, DISSOSS IS AN INTEREST-KILLER FOR THESE RESPONDENTS. THIS MAY BE ACCOUNTED FOR BY THE FACT THAT 95% OF THESE MIS R'S CURRENTLY HAVE CICS INSTALLED. FOR DISSOSS THE CORRESPONDING RATE IS 35% TO GROW TO 45%. APPARENTLY DISSOSS IS PROBLEMATIC FOR THESE RESPONDENTS, AND THEY WOULD PREFER TO AVOID IT. THIS MAY BE A POSITIVE FOR THE SOFTSWITCH APPROACH BUT THIS IS NOT COMPLETELY CLEAR.

- A PROPOSED TURNKEY WAS ALSO TESTED "COMPLETE WITH ALL NECESSARY SOFTWARE. THE MEAN RATING WAS 2.3 WITH 15% RATING 4/5. FUNCTIONALLY THIS MAY BE CONSIDERED A REJECTION.

PC CHARACTERISTICS & THE MARKET FOR STATIONS

- AVERAGE INSTALLED PER COMPANY, NOW = 859
- AVERAGE INSTALLED PER COMPANY, 3 YEARS = 1,700
- PC AAGR = 25.6%/YR.
- TOTAL PC POPULATION IN 250 FIRM UNIVERSE IS 215,000 NOW.
- THIS WILL GROW TO 425,000 IN 3 YEARS.
- NOTING THE 21% INSTALLED/JUSTIFIED AT 6K BY MIS RESPONDENTS, THIS WOULD EQUATE TO 45,000 UNITS IN 1986 GROWING TO A POTENTIAL 89,000 UNITS IN 1989. THIS EQUATES TO A POTENTIAL MARKET OF $534 MILLION.
- AT $4K/STATION 27% WOULD BE JUSTIFIED. THIS EQUATES TO 58,000 UNITS IN 1986 AND 115,000 IN 1989. THIS EQUATES TO A POTENTIAL MARKET OF $460 MILLION.
- AT $2K/STATION 41% WOULD BE JUSTIFIED WHICH EQUATES TO 88,000 UNITS NOW AND 174,000 UNITS IN 1989 AS POTENTIAL. THIS IS A MARKET POTENTIAL OF $349 MILLION.

INPUT

- THE MINIMUM PROBABLE MARKET MAY BE ASCERTAINED BY TAKING THE LOWER 90% INTERVAL OF THE 1989 INSTALLS (150,000) AND CONVERTING IT BY THE 21% JUSTIFICATION RATE. THIS RESULTS IN A POTENTIAL OF 31,500 UNITS OR SALES POTENTIAL OF $189 MILLION AT $6K PER STATION.

- THE 90% INTERVAL MAXIMUM IS 130,000 UNITS WITH A POTENTIAL OF $780 MILLION A 6K PER STATION.

- IT SHOULD BE RECOLLECTED THAT USERS WERE MORE POSITIVE TOWARD THE FLAMINGO STATION AT SPECIFIC PRICE POINTS THAN WERE MIS R'S. AT THE 6K AND 4K POINTS 4/5 RATINGS BY USERS WERE ALMOST TWICE AS HIGH AS MIS. IF STATIONS CAN BE SOLD TO USERS WITHOUT MIS INVOLVEMENT UNIT VOLUMES COULD BE MATERIALLY HIGHER THAN IN THESE MIS-BASED FIGURES.

INPUT

CONCLUSION

- SUMMARY IS VERY DIFFICULT IN A STUDY AS COMPLEX AS THIS ONE. OVERALL THE OUTLOOK FOR FLAMINGO APPEARS QUITE POSITIVE.
- THERE IS A LARGE AND GROWING INSTALLED BASE SUFFICIENT TO SUPPORT LARGE NUMBERS OF FLAMINGO WORKSTATIONS.
- A POTENTIAL "BOTTLENECK" IS THE INCREMENTAL COST OF A "MANDATORY" LASER PRINTER.
- HEAVY PC USAGE AND THE HIGH PROPORTION OF TIME SPENT IN DATA/TEXT ENTRY WOULD APPEAR TO BE A FUNDAMENTALLY POWERFUL ACQUISITION MOTIVATOR.
- FLAMINGO'S EMPHASIS ON CONNECTIVITY IS VERY MUCH "IN TUNE" WITH BOTH USER AND MIS INTENTIONS.
- THE AGREEMENT ON FUNCTION BETWEEN USER AND MIS IS UNUSUAL AND A STRONG POSITIVE.
- THE APPARENT LACK OF CLASSIC PRICE ELASTICITY-WHILE INITIALLY DISAPPOINTING-IS MOST LIKELY A TRUE POSITIVE WITH RESPECT TO WORKSTATION PRICES WHICH APPEAR (AT PRESENT) TO BE IMMUNE FROM THE COMMODITY DOG-FIGHTS WHICH HAVE BESET THE PC BUSINESS.

INPUT

CONCLUSION (continued)

- THE RELATIVELY LOW MARKET POTENTIAL FOR MAINFRAME SOFTWARE SALES HAS THE ENCOURAGING CHARACTERISTIC OF BEING CLASSICALLY PRICE-ELASTIC. SOFTWARE SALES ARE LIKELY TO REMAIN PROPORTIONATELY SMALL, CREATING SOMETHING OF A DEVELOPMENT DILEMMA IN THAT SOFTWARE COST FOR THE MAINFRAME PORTION MAY HAVE TO BE RECOVERED THROUGH STATION SALES. THERE IS GREAT SUBTLTY HERE THAT NEEDS FURTHER WORK.

- THE MIS EVALUATION WHILE LESS "ENTHUSIASTIC" THAN THE USER IS STILL MORE THAN ADEQUATE. BECAUSE OF CONNECTIVITY TRENDS MIS WILL BE A VERY STRONG INFLUENCE ON OVERALL FLAMINGO SALES.

- WITHIN THE CONTEXT OF STUDY OBJECTIVES AND LIMITATIONS, IT APPEARS THAT A VIABLE PRODUCT CAN BE DEVELOPED AND THAT THE NEED FOR DEVELOPMENT RELATIONSHIPS OUTSIDE GTEDS IS CONFIRMED.

CONCLUSION (continued)

- THE SALE, WHILE OF A SYSTEM NATURE, HAS A HEAVY HARDWARE COMPONENT AND A SMALLER BUT CRITICAL SOFTWARE COMPONENT. GTEDS WILL BE HEAVILY DEPENDENT ON ITS VENTURE PARTNERS FOR ITS OWN SUCCESS IN THE EARLY STAGES.

- CONSERVATIVELY ESTIMATED, THE MARKET POTENTIAL IN 1989 CAN EXCEED $500 MILLION.

- ON BALANCE, WE CONCLUDE THAT THE FLAMINGO OUTLOOK IS STRONGLY POSITIVE.

INPUT

PROCEDURAL NOTES

- AS AN ADHOC TASK, INPUT INTERVIEWED USERS IN BELL COMPANIES AND 4 BELL MIS DEPARTMENTS FOR A TOTAL OF 11 ADDITIONAL INTERVIEWS. NO MATERIAL DIFFERENCES EMERGED TO DISTINGUISH THE BELLS FROM THE MAIN GROUPS. THESE INTERVIEWS WERE DONE AT NO EXTRA CHARGE.

- USER DEPARTMENTS WERE WIDELY VARIEGATED IN THE MAIN GROUP. OF SAMPLE (N=80) 16% WERE FROM THE MARKETING DEPARTMENT, 15% ACCOUNTING, 13% PERSONNEL, 12% MIS USERS, 9% SALES, 5% ENGINEERING AND THE BALANCE OTHER DEPARTMENTS. DEPARTMENTAL SELECTION WAS RANDOMIZED.

- USER INDUSTRIES WERE 37.5% MANUFACTURING, 31.3% EACH BANKING AND INSURANCE FOR N=80.

- MIS INDUSTRIES WERE 32.5% MANUFACTURING, 35.0% BANKING, 22.5% INSURANCE AND 10% BELL TELCO FOR N = 40.

PROCEDURAL NOTES (continued)

- THE MAIN STUDY UNIVERSE IS SPECIFIED AS THE 100 LARGEST MANUFACTURING COMPANIES, THE 100 LARGEST BANKS AND THE 50 LARGEST INSURERS. SAMPLE FROM CURRENT PUBLIC AND ACCEPTED LISTS.

- INPUT WELCOMES QUERIES ON ALL MATTERS RELATING TO THIS STUDY. INQURIES SHOULD BE DIRECTED TO D.W. FOSTLE, VICE PRESIDENT AT (201) 299-6999.